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ABSTRACT

This publication reports the results of an effort to assess the consequences of targeting federal compensatory funds toward all elementary students showing low achievement rather than only to those who were first low income and then low achieving. The document deals first with technical issues--the suitability, feasibility, and cost implications of the use of performance criteria. It then considers the fiscal issue of the consequences of resource redistribution from the use of performance criteria. The report's overall conclusion is that serious but not insurmountable political, technical, and cost problems would exist in the creation of the required data base. However, should these problems be solved, the report argues that a potentially appealing combination of income and performance criteria could be created at a 25 percent increase in program cost. Additionally, it reports that by allowing a choice between income/AFDC and performance criteria, the program could be designed to prevent any district from losing monies while at the same time aiding those nonpoverty students who are educationally disadvantaged. (Author/DN)

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Research Report

EPRC 2158-5

THE USE OF PERFORMANCE CRITERIA TO ALLOCATE COMPENSATORY EDUCATION FUNDS

Prepared for:

OFFICE OF THE ASSISTANT SECRETARY
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POLICY RESEARCH REPORT

A Policy Research Report is an official document of the Center for the Study of Social Policy. It presents results of work directed toward specific research objectives. The report is a comprehensive treatment of the objectives, scope, methodology, data, analyses, and conclusions, and presents the background, practical significance, and technical information required for a complete and full understanding of the research activity. The report is designed to be directly useful to social policy makers.

RESEARCH MEMORANDUM

A Research Memorandum is a working paper that presents the results of work in progress. The purpose of the Research Memorandum is to invite comment on research in progress. It is a comprehensive treatment of a single research area or of a facet of a research area within a larger field of study. The Memorandum presents the background, objectives, scope, summary and conclusions, as well as method and approach, in a condensed form. Since it presents views and conclusions drawn during the progress of research activity, it may be expanded or modified in the light of further research.

RESEARCH NOTE

A Research Note is a working paper that presents the results of study related to a single phase or factor of a research problem. It also may present preliminary exploration of a social policy issue or an interim report which may later appear as a larger study. The purpose of the Research Note is to instigate discussion and criticism. It presents the concepts, findings, and/or conclusions of the author. It may be altered, expanded, or withdrawn at any time.

PREFACE

The Use of Performance Criteria to Allocate Compensatory Education Funds is a two-part study by SRI's Educational Policy Research Center. It represents a broadly based effort to assess the consequences that would occur if federal compensatory funds were targeted toward all elementary students showing low achievement rather than only to those who were first low income and then low achieving.

Such a shift was brought to national attention in 1973 by H. R. 5163, authored by Representative Albert Quie. The bill's specific proposals were not adopted by the 93rd Congress, but the question of compensatory education for the primarily economically disadvantaged versus the educationally disadvantaged is almost certain of continued national debate relating to educational goals and to technical and fiscal problems. These two companion analyses have been prepared as substantive evidence for the technical and fiscal discussions and as support information for the broader discussions of national education goals. The Summary that follows covers both parts.

Part I: "Technical Issues: Suitability, Feasibility, and Cost Implications of the Use of Performance Criteria," by John A. Emrick.

Part II: "Fiscal Issues: Resource Redistribution Consequences of the Use of Performance Criteria," by James W. Guthrie, Anne S. Frentz, and Rita M. Mize.

SUMMARY

Currently ESEA Title I monies are allocated to the states and counties based upon income data from the Census and AFDC data from the welfare roles. These monies then pass on to school districts and to particular schools within each district based upon similar income and welfare considerations. Finally, within the individual school, monies are targeted on the most educationally disadvantaged students regardless of their family's income level or welfare status. Nevertheless, the result of this process is that the majority of Title I money is spent on students from low income and welfare families. This is consistent with the intent of the basic legislation which was part of a series of laws designed to overcome the effects of poverty.

An alternative to the above procedure would be to focus money directly upon the most educationally disadvantaged. Since school performance is only moderately correlated with poverty--i.e., not all poor children perform poorly, nor do all non-poor children perform well--this proposal would of necessity allocate more money to children not in poverty. Such a proposal is found in H.R. 5163.

Ultimately, the choice of allocation criterion flows from Congress' sense of priorities and values at a particular time. To inform this choice we have prepared papers to aid in answering two questions. First, what are the implications of creating a performance data base that could be used to allocate monies to low-achieving students? Second, what would be the effect of such changes in the flow of Title I monies if performance criteria were used?

Our overall conclusion is that serious but not insurmountable political, technical, and cost problems exist in the creation of the required data base. If those problems can be solved, then a potentially appealing combination of income and performance criteria could be created at a moderate (25 percent) increase in program cost. By allowing a choice between income/AFDC and performance criteria, the program could be designed so as not to cause any district to lose monies while at the same time aiding those non-poverty students who are educationally disadvantaged.

We therefore recommend that either NIE or a similar organization, working in a participatory mode with the educational community, analyze the range of data base problems. This analysis should include but not be limited to the technical problems of test and measurement, and should make recommendations within a year on the political, technical, and fiscal alternatives and on plans to implement such alternatives.

Among our specific findings are the following.

Creation of Performance Data Base

If one assumes an intent to identify specific children with an educational deficit, presumably in basic skills, and allocate monies directly for them, then:

- Variations in curriculum across states and to a lesser extent, among school districts within a state, raise complex questions regarding the practicality and meaning of any national measure of educational disadvantage at a given grade level.
- To the extent that national measures of educational disadvantagement are created, they will also imply a national curriculum, i.e., a consensus about what should be learned by a particular grade level. Such a consensus may not be desired by either the Congress or the states.
- With the present state of the art of test construction, and the variability of test performance for a given child on a given day, numerous "incorrect" inclusions and exclusions to the program

would result. The percentage of students "misclassified" might not be large but the absolute number would be.

- The total cost of administering the necessary tests to students could approach $250 million, an appreciable fraction of all Title I monies. States and school districts could obtain other benefits from the test information, e.g., a few states such as California already test every child because it is felt that such information is already worth the cost. However, we could not estimate the value of the benefits that would flow to states and local districts from a national testing program.
- There could well be differential effectiveness resulting from monies allocated under a performance criterion. It appears possible, though far from certain, that the use of a performance criterion might somewhat lower the effectiveness of the program per dollar spent, e.g., more children receiving assistance might already be operating at their capability level under the performance criteria than under the poverty/welfare criteria.
- If a performance criterion were used only to allocate monies to the school district level, this would considerably reduce the test and measurement problem and the cost of the data. However, this brings up the questions of what is then to be done with the monies once inside the school district, and what allocation criterion is to prevail there.

Changes in Allocation

Using existing results from state testing programs, it was possible to estimate the changes in allocation of monies between states (for a 14-state sample) and within states (for a 7-state sample) which would result from the use of alternative criteria. Rather than dollar amounts, the comparisons were based upon changes in the number of eligible students under various alternative criteria.

The analyses used definitions of educational disadvantage which ranged from below the 10th percentile to below the 35th percentile on the tests. However, the pattern of results was not sensitive to the percentile chosen and the results described in this summary are for students below the 15th percentile unless otherwise stated. Further analyses by school district and student characteristics were then made for California and Alabama. Finally, analyses were made of the effect and cost of a combined criterion that used the higher of either the income/AFDC or a performance criterion.

Within States

- Within states, the districts with currently low concentrations of Title I eligible students would gain funds, and those with high concentrations would lose funds.
- Within California a further refinement of the above results shows that cities of populations greater than 200,000 would lose funds while smaller cities, suburbs, and rural areas all would gain monies.
- Los Angeles County would lose 6 percent of its overall funds. However, if the county is divided into highly urbanized areas--Los Angeles City and Long Beach--and the rest of the county, we find that Los Angeles and Long Beach would lose 16 percent and 32 percent respectively while the rest of the county would gain 15 percent.
- No California district with over 30 percent minority enrollment would gain money. Separating out black students, no district with over 10 percent black students in its enrollment would gain funds.
- The minority analysis for Alabama contradicts the above results in that the integrated districts (20 percent to 50 percent black enrollment) would gain funds while districts both above and below this mid-range would lose money. Thus it was the integrated districts that benefited.

Among States

- Out of the sample of 14 states, the five Southern states (Alabama, Arkansas, Mississippi, North Carolina, and Tennessee) showed sizable gains, from 65 percent to 125 percent, when a performance criterion was used for allocation. Two New England states, New Hampshire and Rhode Island, also showed moderate gains. The pattern of change for the rest of the states varied: Arizona, -9 percent; California, +4 percent; Hawaii, 0 percent; Iowa, -54 percent; New Mexico, +57 percent; North Dakota, -5 percent.

Current Title I Versus a Performance Criterion

- A formula that would allow a school district to choose either the current Title I criterion or a performance criterion to calculate its Title I entitlement would aid educationally disadvantaged children of working and middle income families while not reducing funds to the children of poverty families. The broad question we addressed here was: what would be the increase in costs if allocations to current students were maintained and additional students were funded at the same cost level.

  Based upon an analysis of six states, the average increase in cost appears to be about 25 percent, with the probable exception of southern states. For Alabama, the one southern state in the sample, the increase would be 165 percent. As previously mentioned, a performance criterion would mainly aid southern states relative to other regions.

- The poverty versus performance criteria effects were also analyzed with a restriction assumed--that a district could only use the performance criteria if it had more than 16 percent of its students below the sixteenth percentile--in the belief that each district had some inherent capacity to effectively help small numbers of educationally disadvantaged children. The resulting reduction in cost was quite modest for most states and negligible for the southern states.

- An analysis was performed in which the poverty population and the academically-deficient population were combined. The rationale behind this was that the needs of each population were, to a degree, distinct. Thus double-counting would enable the needs of both the poverty population (auxiliary, supportive health services, for example) and the academically deficient population to be targeted and met more effectively.

  Under this arrangement the increase in funding is approximately 25 percent.

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THE USE OF PERFORMANCE CRITERIA TO ALLOCATE COMPENSATORY EDUCATION FUNDS

Technical Issues: Suitability, Feasibility, and Cost Implications of the Use of Performance Criteria

Prepared for:

OFFICE OF THE ASSISTANT SECRETARY
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I OVERVIEW

This report studies the implications of an alternative method of allocating and targeting funds for ESEA Title I which aroused considerable debate during the past year, particularly in the House of Representatives' General Education Subcommittee. Title I is a categorical program of financial assistance to targeted local schools and districts which contain economically disadvantaged children above some minimal number. The program has been in effect for eight years and involves a current annual outlay of $1.5 billion. The principal sources of eligibility data are the census (providing income data) and the welfare roles (providing AFDC data). In FY 1972, eight million children were targeted for Title I, which means the average per pupil outlay was less than $200. But funds are not allocated to individual children. Rather, they are allocated to Local Education Agencies (LEAs) through State Education Agencies (SEAs). It is often hard to trace program expenditures beyond the level of the LEA.

In February 1973, Minnesota Representative Albert Quie introduced a bill (HR 5163) which he argues would vastly improve the effectiveness of Title I. Briefly, Quie contends that school performance is only moderately correlated with poverty; hence, many children who are performing badly but are not from impoverished families are excluded from Title I services. His proposal would amend Title I--first, by substituting performance criteria for the socio-economic criteria currently used in determining eligibility; and second, by requiring that no less than 85 percent of the program expenditures be spent on the targeted children for provision of individually prescribed instruction toward attainment of negotiated objectives in the areas of reading and mathematics. Quie's amendment proposes that a national assessment be made in the areas of reading and math, using criterion-referenced tests on samples of pupils across three grade levels. Allocations of Title I funds to the states would be based on relative incidence of disadvantage, defined as performance below some minimum level. The states would then be responsible for targeting these funds to eligible children within the local agencies, who in turn would be responsible for diagnosing individual needs, prescribing appropriate treatments or services, and evaluating results.

Our policy study focuses on four aspects of Quie's alternative--goals, feasibility, cost, and impact:

- The goals analysis involves an examination of the social and legislative implications of the proposed redefinition of educational disadvantage. Briefly, the consequences of this redefinition are viewed as profound. Quie's proposal, if adopted, would alter the thrust of Title I in two basic ways. First, it would define "program" and "eligibility" in terms which are independent of social, economic, and cultural factors. This would represent a radical change to those who view Title I as social legislation designed to compensate for effects of adverse environment or to equalize school resources at some minimal level. Second, this shift in definition would constitute a change from the concept of "equal educational opportunity" to that of "equal educational performance," albeit at some minimal level. Definition of this minimal performance standard at the national level would create a further complication, because it calls for federal specification of educational goals and outcomes.
- The feasibility study explores methodological and technological requirements for implementing the alternative. The general conclusion is that the state of the art regarding criterion-referenced systems of measurement is not sufficiently advanced to meet the demands of such a massive application. There are even more complex difficulties in developing and utilizing a defensible performance-based definition of educational disadvantage. For example, to derive and employ a performance definition of need on an equitable basis, the same criteria would have to be applied uniformly throughout the country. However, curricula are known to vary substantially within and across states.

Therefore, it would be difficult to determine the extent to which the results of a national assessment reflected these differences in curricular emphases or true differences in educational attainment.

- The cost analysis shows that even if we were convinced that a single performance standard was both valid and defensible, the task of targeting the program to individual participants would constitute an enormous logistics and cost item. Quie has suggested that a testing program which would provide the data needed for allocations to states could be implemented for approximately $5-1/2 million, and that states could effectively target the program to their own constituencies. It should be recognized, however, that if the definition of disadvantage is to be uniform throughout the country, then a standard set of measuring procedures must be applied to each and every potential participant. This would ultimately result in a census testing approach to targeting which, based on conservative estimates, would cost in excess of $1/4 billion. Since the costs for gathering targeting data would amount to 1/6 of the total program budget, they cannot be viewed as trivial.
- The impacts analysis includes a consideration of general differences between current recipients of Title I services and those who would participate if Quie's approach should be adopted. Substantial changes in the distribution pattern of program resources appear likely, with at least some portion of funds being diverted away from the poorest districts and into those more affluent. An increased flow of resources into the southern states also appears probable, although the magnitude of any redistribution will likely be minimized by some form of "hold-harmless" provision. A frequently expressed concern regarding the Quie Bill is its potential for producing "negative incentives," whereby programs which succeed in promoting pupil growth would risk loss of continued support, and programs producing little or no positive growth would be assured of continued funding.

Quie's amendment proposes several remedies to current difficulties in Title I, but the implications of these remedies are profound, and would introduce major, costly, and long-lasting changes into the national program. We think the basic features of the amendment--performance-based diagnosis of need and individually-prescribed instruction toward negotiated objectives--could be usefully incorporated in local and state level programs; but they do not offer a viable solution to the allocation and targeting problems of Title I at the national level. We therefore recommend against adopting performance-based eligibility criteria for federal targeting of Title I funds.

II THE PROGRAM

The Elementary and Secondary Education Act of 1965 (ESEA) was signed into law April 11, 1965. Federal aid for educationally deprived children was authorized as Title I of P.L. 81-874. In January 1968, Congress officially redesignated the enabling legislation as Title I, ESEA--Financial Assistance to Local Educational Agencies for the Education of Children of Low-Income Families.

The purpose of this program is "to provide financial assistance ... to local educational agencies serving areas with concentrations of children from low-income families to expand and improve their educational programs ... [to meet] the special educational needs of educationally deprived children." (Finch, 1969, p. 2.)* The term "educationally deprived children" has been defined in the Title I regulations as:

> ... those children who have need for special educational assistance in order that their level of educational attainment may be raised to that appropriate for children of their age. The term includes children who are handicapped or whose needs for such special educational assistance result from poverty, neglect, delinquency, or cultural or linguistic isolation from the community at large. (U.S. Office of Education, 1969, p. 7.)

In size, Title I represents the largest single federal program of categorical aid to public elementary and secondary schools. The budget for FY 1972 (for which the most recent figures are available) involved a total expenditure of nearly $1.6 billion, directed toward the needs of nearly 8 million pupils in 16,000 school districts throughout the United States and its territories. This single program amounts to nearly 30%

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*The references are listed after the main text of this report.

of the total USOE budget, and nearly 70% of all USOE assistance to the disadvantaged.*

Because of the need to maintain a constitutionally based (or implied) separation of federal and state responsibilities in the conduct and financing of education, Title I appropriations are allocated to State Education Agencies (SEAs), which in turn distribute resources to local education agencies (LEAs)--primarily districts, but occasionally larger or smaller units such as counties or schools--on the basis of relative disadvantage or need of their student populations. Since Title I is a categorical program, state level allocations are determined on a (complex) formula basis. Briefly, a given state's share of total revenues is determined by the number of children within the state, aged five to seventeen, who

- Are members of low-income families ($2,000 or less annual income); or
- Are members of families receiving more than $2,000 annually in the form of AFDC assistance; or
- Are in foster homes; or
- Are in institutions for neglected or delinquent children which do not receive state education assistance.

This total of the four groups is then multiplied by one-half the average state or national per-pupil expenditure, whichever is higher.

By law and tacit agreement, states are required to observe federal regulations and guidelines in administering these program allocations (delivering program services) to appropriately targeted pupils via LEA Title I. But because of the enormous range and complexity of intra- and inter-state variability on nearly all aspects relevant to program administration, coupled with generally inadequate state administrative allocations (e.g., 1%), noncompliance with federal guidelines at the local level is frequently observed with Title I projects.

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*National Advisory Council for the Education of Disadvantaged Children, p. 7, (1972).

Program Criticisms

A program as large and complex as Title I is bound to encounter problems and to show some deficiencies. Recently, however, the program has come under considerable criticism in the following three general categories:

- Allocation Formula. Eligibility or entitlement criteria are viewed as unrealistic or inequitable, since their meaning varies from state to state, as well as from district to district within states.
- Targeting. The program is criticized as reaching either too few or the wrong targets because of unreliability and obsolescence of targeting data.
- Delivery of Services. The delivery system is considered inadequate, because, when reviewing program effects, it is difficult to trace expenditures below the level of the LEA, and almost impossible to follow them below the level of individual school expenditures.

These three categories of criticisms are considered in more detail in the paragraphs to follow.

Allocation Problems

The criticism that the current formula produces inequitable distribution of resources is well grounded. Major differences in general cost of living between primarily agricultural communities and urban industrial communities are not accommodated in the current poverty component of the entitlement, resulting in under-allocations to states having high proportions of genuinely poor communities whose inflated economies do not meet the national poverty criteria. Largely self-sufficient (and heavily subsidized) farm states, on the other hand, tend to receive above-average allocations on an urban-adjusted income basis. The crucial problem, of course, is in defining an appropriate normalizing procedure for adjusting within-state income to a uniform economic base. It is doubtful that a truly normalized income scale would be politically acceptable, since the current economic diversity (which this scale would have to accommodate) is so large that the poverty definition would probably have to vary by several orders of magnitude (e.g., from $1,000 to $6,000).

The second component of the formula, entitlement based on AFDC, also can be validly criticized. Since welfare administration is a state rather than federal function, programs and procedures are far from standard throughout the nation, and states which have adopted generous welfare-eligibility criteria can produce a more than trivial impact on overall allocation patterns. The Title I allocation formula is not designed to adjust for such differences, and the result is a certain degree of inequity in funding which directly reflects state variation in welfare policy. Also, there is a tendency for certain ethnic groups to reject welfare assistance for primarily cultural reasons (e.g., Chicanos). These groups, in turn, do not receive their "fair share" of the compensatory education support.

Targeting Problems

Targeting criticisms overlap to some extent with allocation criticisms in that both reflect inadequacies of the current entitlement procedures. One frequently expressed targeting criticism cites the obsolescence of census data (the primary source for income determination) and the unreliability of welfare data for targeting state funds to LEAs. Census data are gathered only once a decade, and the processing lag produces a situation in which the recency of data ranges from two to twelve years. Population growth and mobility patterns coupled with shifting economic characteristics of communities vary dramatically over this interval, resulting in moderate- to large-scale targeting errors on the basis of census income data. The magnitude of these errors can be witnessed in the recent difficulties in reallocating and retargeting, from a basis of 1970 census data. These difficulties precipitated current vigorous efforts in some sections to reformulate Title I (to preserve existing funding patterns). Another criticism of census data acknowledges the census undercount of certain disadvantaged groups.

A second targeting criticism is that the services are reaching neither the number nor the type of children for whom Congress intended the program. This criticism takes two forms: (1) that the current level of support is inadequate to meet the need; or (2) that the current formula excludes many children who should be entitled to services. It is unlikely that any overall appropriation level will be judged completely sufficient, because of the ipsative nature of need determination.* But questions do arise regarding whether it is preferable to concentrate resources on those defined as most in need, or to distribute available services across a broader range of disadvantage. The current policy of concentrating resources at the lowest poverty levels is criticized as serving only "approximately one third of the population Congress intended it to serve" (National Advisory Council on the Education of Disadvantaged Children, 1972, p. 7). This criticism obviously involves an interpretation of congressional intent.

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*In general, need is defined in relative rather than absolute terms. Thus there will always be a "poor" group, relative to the total population.

An alternative interpretation of Title I congressional intent is advanced by critics who argue that educational disadvantage should be defined in terms of academic performance instead of social/economic variables. These critics maintain that the current formulation targets services to fewer than one-half of school children who are performing poorly and thus are in need of educational assistance. The proposed alternative, that of defining disadvantage in terms of school performance, is the basis for much of this report and is considered in detail in several contexts in chapters to follow.

Delivery Problems

Criticisms relating to delivery of Title I services point up further ambiguity in the intent of the program. Title I is unique as a federal assistance program, in that an evaluation component is legislatively mandated. However, it is not clear whether the intended primary locus of assistance is the school or the pupil. Critics who view the program as designed to provide financial aid to poverty-impacted schools argue that evaluations should be directed at delivery of such assistance, and not at studies of pupil growth. Conversely, those who see the principal Title I mission as intervention in the education of poor children argue that the diffusion of services at the school level accounts for the general failure of the program to produce measurable pupil change so far. And, of course, the sheer magnitude and complexity of the total program, coupled with the organizational vulnerability of the federal-state and state-local interfaces, has made effective and uniform administration of delivery of services a nearly impossible task. As a result, funds are inevitably misspent, and the frequency with which audit exceptions are discovered may jeopardize the future of the program.

An Alternative Proposal

A number of alternative formulations of the Title I program have recently been proposed. Perhaps the most radical alternative is HR 5163 presented by Congressman Albert Quie (Republican, Minnesota), known as the Quie Bill. Briefly, Quie argues that performance is only moderately correlated with poverty; hence, many children who are performing badly but are not from impoverished families are excluded from the Title I services. His proposal would amend Title I in two ways:

- By substituting performance criteria for social/economic criteria in determining eligibility.
- By requiring that no less than 85% of program funds be spent on targeted children in the form of individually prescribed instruction toward attainment of negotiated objectives in the areas of reading and mathematics.

To identify eligible children, Quie proposes that a national assessment be made in the areas of reading and mathematics, using criterion-referenced tests on samples of pupils across three grade levels. Allocations of Title I funds to states would be based on relative proportions of children identified as "educationally disadvantaged"--i.e., those failing to perform at or above criterion levels. The states would then be responsible for targeting funds to eligible children within LEAs. LEAs would presumably be responsible for diagnosing individual needs, prescribing treatments (or negotiating objectives), and evaluating results.

On the surface, this proposal has some attractive and appealing features. The approach would focus remedial attention on those children who are performing at a substandard level, and appears to offer a tighter and more defensible mechanism for resolving problems in allocation, targeting, and delivery of services. Upon deeper analysis, however, a number of major issues and problems emerge, the implications of which argue against adopting Quie's alternative. These issues are explored and discussed in the following policy analysis perspectives throughout the remainder of this report:

- Goals analysis, involving an examination of the social and legislative implications of the redefinition of educational disadvantage.
- Feasibility analysis, or a study of the technological and methodological demands of the alternative with respect to the current state of the art.
- Cost analysis, or an estimate of the probable cost and logistics requirements to implement the alternative.
- Benefit analysis, involving evaluation of probable short- and long-range consequences of the alternative.

III GOALS ANALYSIS

Quie proposes what appears to be a modest and logical shift in the definition of educational disadvantage. However, the consequences of this shift are quite profound in that they imply reinterpretations of both the legislative intent of Title I, ESEA, and the federal role in the specification of educational outcomes.

Most interpretations of the legislative intent of Title I and other provisions of ESEA have been based on an assumed connection between the quality of educational environment (such as method and materials of instruction and social and cultural environment), and the educational progress of students. Given an awareness of marked differences across and often within communities in the social and economic composition of local educational environments throughout the nation, Congress enacted the Elementary and Secondary Education Act of 1965 in an effort to correct the perceived inequities and to promote conditions which would better reflect the prevailing philosophy of commitment to providing "equal educational opportunity." This was important social legislation, since education is generally perceived as the primary instrument by which social and economic mobility are attained. Moreover, to the extent that evidence of a relationship between educational progress and social/cultural/economic subgroup membership exists, then a case can be made that equal educational opportunity does not exist. Thus, the Title I provision of ESEA was designed primarily to reduce the inequity of educational opportunity on the basis of probably the most basic and direct indicator of such potential inequity: namely, family income. Stated differently, the Title I legislation was designed primarily to eliminate the major educational consequences of adverse economic conditions within communities.

Whether or not the program is succeeding in this goal is certainly the subject of much controversy and continuing investigation.

Another consideration is the separation of federal and state control over educational activities, which may make the use of performance criteria neither justifiable nor legal. Briefly, the federal constitution makes no mention of responsibility for or control over the conduct of public education. Many state constitutions, however, do make specific reference to educational activities. Thus, traditionally, American education has been the states' right and responsibility. In the last two decades, tension between the state and federal education agencies over the conduct and influence of educational practices has notably increased. States are in the complex dilemma of needing financial assistance, which the federal government seems capable of providing, and at the same time of seeking to maintain autonomy regarding educational policy and practice, which many federal assistance programs seek to influence (e.g., desegregation and ESEA). Quie's alternative clearly establishes a new federal role in public education in that it requires specification of national standards for educational outcomes in the areas of reading and mathematics. As will be shown in later discussions, this is a fundamental requirement of the proposed program and cannot be compromised if the alternative is to be seriously implemented. The problem is that a constitutional amendment (or at least some enabling legislation) may be required before federal specification of performance standards is possible.

In short, the issue is: Can "educational performance" be substituted for "educational opportunity" legitimately, and within the intent of the current legislation? This is not to say that the performance-standard approach to educational output--in terms of some minimally acceptable criterion--is not a very attractive proposition. Indeed, most educators, social and behavioral scientists and philosophers see great potential benefit in this goal. The question becomes "Is Title I the proper vehicle for this reform?" We think not, but the answer to this question obviously depends on how one resolves the foregoing issues of congressional intent and constitutional legality. But beyond these primarily political and legislative concerns are the realistic questions of feasibility and cost. That is, assuming a decision were made today to adopt HR 5163, could the alternative actually be implemented, given our current technical and methodological state of the art? Further, how much would it cost; and, since it is likely to be more costly, how much greater overall educational return would the alternative be likely to produce? Each of these major practical issues is presented and discussed in the following sections of this report.

IV FEASIBILITY ANALYSIS

Quie's proposed amendment to Title I requires more than a simple rethinking of the legislative intent of the Title. The methods and procedures by which the proposed revision would be implemented are by no means clearly available. Many of the components on which implementation of Quie's amendment is predicated require a state of the art which we have not yet in general attained. The purpose of this section is to discuss the technical and methodological requirements of the Quie Bill and to consider the general feasibility of implementing this approach given these requirements. Two large problem areas give rise to serious questions regarding the feasibility of any test-based approach to targeting resources; these areas are definition of content domains and establishment of performance (i.e., eligibility) standards.

Alternative Systems of Measurement

One of the major features of HR 5163 is its reliance on criterion-referenced systems of measurement for developing targeting and allocation data, for diagnosing student need, and for assessing student progress or program impacts. Criterion-referenced measurement technology and more familiar norm-referenced procedures are generally distinguished from each other in terms of the purpose for which the measurement is made, rather than in the appearance or properties of the measurement instruments *per se*. Criterion-referenced procedures are generally designed to characterize the examinee with regard to the presence of, or measurable quantity of, some trait or skill dimension, often with reference to some specific criterion. Norm- or distribution-referenced procedures, on the other hand, are designed to differentiate individuals with regard to a (possibly similar or identical) trait or skill dimension, and generally involve reference to the performance of a "norm sample" for interpretation of scores.* Quie, in his testimony before the House (Congressional Record, 6 March 1973) tends to obscure this distinction when he states, "... through the use of a criterion-referenced test we could determine how well the average third grader should be able to read, test third graders to determine how many fell far below the expected level of competency, and then allocate funds to be used to bring those students up to the expected level." This measurement application is much more characteristic of norm-referenced than criterion-referenced approaches.

At present, we distinguish among three types or applications of criterion-referenced measurement: objectives-based testing, mastery testing, and domain-referenced testing.

The general form of this objectives-based testing strategy is as follows: Given some program or treatment (x), the student will be able to produce the behaviors (y), under conditions (z), or at rate (z). The definitions of the parameters x, y, and z are left most often to the judgment and ingenuity of the teacher or evaluator. As might be expected, a great deal of variation (and often triviality) exists in objectives and associated measurement procedures under this approach.

Mastery testing requires the formulation of sequences of contingencies--generally, but not necessarily, binary or "pass/fail"--which constitute the mastery test points. It is possible to have a single mastery test point (e.g., a written driver's test) or multiple tests (e.g., a learning hierarchy with separate tests for each level).

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*For a discussion of the recent history of norm-referenced measurement in American education, the reader is referred to Appendix A.

The principal features of domain-referenced tests are as follows:

(1) An explicit definition of the domain to be measured, including the skills or behaviors and the range of eligible content.

(2) Explicit rules for generating or constructing items which will be used to sample the examinee's status with respect to that domain (generally referred to as "item forms").

(3) Explicit rules for interpreting performance on test items.

These approaches to measurement differ from each other in several ways. Nevertheless, they all represent attempts to obtain directly interpretable performance data--that is, information which describes specific competencies of individual examinees.* Norm-referenced approaches, on the other hand, do not generally yield indicators of whether specific skills are present or absent in a given examinee.

Comparison of Testing Alternatives

At this point it appears that the various achievement-testing alternatives could be arrayed along a single continuum with respect to the generality or specificity of the domain to which test performance is to be generalized. Objectives-based tests would have the most limited (i.e., specific) generalizability, whereas standardized achievement tests would have the least specific (i.e., the domain becomes very broad, if not vague). The mastery-testing and domain-referenced approaches would occupy intermediate positions on this dimension and would be seen to vary primarily in terms of the decision purposes of the testing. Consider, for example, a reasonably well-defined domain at a level of intermediate generality, such as "ability to perform any addition operation." If the purpose of testing were to assess whether students could attain some specified level of proficiency in addition operations, the testing application would assume the form of mastery-testing procedure. A mastery criterion would be established on rational or empirical grounds, and the test would be administered to a group of students. Performance would then be evaluated with respect to attainment or non-attainment of the criterion.

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*For further descriptions of the approaches to measurement, the reader is referred to Appendix B.

The same test could be used in a domain-referenced context, with test performance evaluated in terms of the domain measured--extent of arithmetic ability, error rate in addition problems, or whatever. Finally, this same test could also be used in a norm-referenced application if, for example, some version of it were administered to a norming sample against whose performance that of our target population or sample could be compared. If such norming were carefully conducted, using conventional procedures, we would now have two possible interpretations of performance of our group of examinees on the test in question:

(1) The proficiency of our examinees in terms of appropriate behaviors defined by the domain.

(2) The relative performance of our examinees compared with that typical of the norming sample.

An example of such a dual interpretation might be as follows: Using the above-defined domain of arithmetic addition problems, a teacher of the third grade might be able to say at the end of a semester of instruction that her class averages 90 percent correct on any addition problem, and that this performance relative to third graders throughout the nation is at the 95th percentile, or that her class is performing at the fourth-grade level. The obvious advantage of such a multiple interpretation is that it allows one to judge the adequacy or desirability of the outcome in terms of the domain itself, as well as relative to the performance of comparable groups. This latter interpretation (the norm-referenced one) must, however, take into consideration the same restrictions that apply to conventional norm-referenced interpretations; i.e., since we do not currently utilize a national curriculum, variations in performance within a norming sample on any domain-referenced task will be influenced by variations both in curriculum and in the individuals who constitute the norming sample. Essentially, this consideration points to the vulnerability of any norm-referenced approach to problems of invalidity.

These considerations suggest that a domain-referenced approach probably would be most appropriate for developing allocation and targeting data, whereas a mastery-testing approach might be required for diagnoses of individual needs and objectives. Appropriate instruments do not, however, currently exist in readily-accessible forms or quantities. Thus, in order to implement any test-based approach to targeting resources, instruments would have to be developed and validated. There are two major problems in developing appropriate domain-referenced tests: definition of domains, and establishment of performance standards for defining disadvantage.

Definition of Domains

Two questions arise regarding the definition of domains. First, should the definition be narrow or broad with respect to content area? Second, should it be representative of or independent of current educational curricula? The trade-off regarding breadth of domain definition is in terms of precision versus generalizability of estimates. For very narrowly defined domains, performance estimates may be precise and reliable, but possibly not generalizable to related aspects of content. In this sense, the domain-referenced test approaches the objectives-based test.

On the other hand, if the domain is very broadly defined, large samples of performance are required for reliable interpretation, although generalization to the content area becomes more valid. The extreme case becomes one in which the domain is defined as "general ability."

Similarly, in defining a domain, considerations of curricula are important. If the domain definition were (or attempted to be) inclusive of all current curricula, it probably would resemble current standardized achievement tests. If the definition were curriculum-free, it might resemble an IQ test. If the definition were restricted to "dominant" curricula, it might be invalid for use with pupils whose educational experience is based on quite different curricula. This is to say, we do not yet fully understand the relative impacts of variations in curricula on educational attainment. It is most likely that these curricular variations produce corresponding differences in performance. This means we would have to choose one of four options:

(1) Prepare separate curriculum-specific domain definitions.

(2) Select one dominant (or arbitrary) curriculum for the domain definition.

(3) Expand the definition to be inclusive of all curricula.

(4) Adopt a compromise definition.

The full implications of these options are not immediately apparent; obviously they vary in terms of allocation functions at the local versus state versus national levels. It should be noted that a characteristic shared by most currently used domain-referenced and other criterion-referenced systems of measurement is that they were developed in conjunction with specific methods and materials of instruction (e.g., Hively et al., 1973). For this reason they are imbedded within particular curricula. Any nationwide application which attempts to take into account variations in curriculum, therefore, appears fraught with problems, given the current state of the art.

We strongly recommend that the options suggested above and their consequences be carefully researched before large investments are made in test development and assessment programs.

Establishment of Performance Standards

The major questions regarding the setting of performance standards for defining "disadvantage" are:

(1) Should the standard be distribution-referenced or based on some absolute (or rational) criterion?

(2) Should a single standard be imposed, or should we adopt variable standards which vary according to region, locality, and curriculum?

(3) Should the standard be oriented toward age-level or experience-level criteria?

(4) Should separate standards be developed for exceptional children (e.g., the retarded and emotionally handicapped)?

(5) Should the standard be in terms of a cutoff point, or should we provide flexibility by using an interval criterion?

It should be apparent that answers to these questions will play an important role in determining both the ultimate costs and technical feasibility and requirements of implementing the program. For example, the administrative logistics for a national assessment would be considerably different in cost and complexity than for 50 separate statewide, or 16,000 district-wide assessments. And if multiple criteria or instruments are employed, the likelihood of methodological difficulties would increase by several orders of magnitude.

The use of a single performance standard is strongly implied by HR 5163. The presumed advantages of a single standard are that it would provide (1) a uniform definition of educational need, (2) an equitable basis for allocating program funds to states (supposedly overcoming the shortcomings of the multiple poverty criteria), and (3) a good benchmark against which to evaluate program effect. Difficulties of this approach are in establishing the standard and in defending it in view of the enormous regional and local variation in curricula throughout the country. Quie suggests the standard be set by determining "... how well the average third (or sixth, or ninth, or whatever) grader should be able to read (or solve problems, or whatever) ..." (Congressional Record, 6 March 1973), as if procedures for such determination currently exist. In fact, short of some form of arbitrary judgment, they do not. The creation of a National Commission on Educational Disadvantage, as suggested by Quie, for the purpose of determining the standard and developing a test would not alleviate any of the above developmental problems.

V COST ANALYSIS

Quie, in his testimony, reports that the cost of implementing his alternative has been estimated at $5.6 million. In our study of the probable costs, we arrive at a figure which exceeds this $5.6 million estimate by a factor of 50. This section presents the details of the assumptions and results of our analysis.

Our analysis of issues involved in the implementation of HR 5163 is broken into two cost categories: (1) Instrument development, and (2) Implementation (allocation, targeting).

Instrumentation Costs

The previous analysis of technological and methodological issues pointed up the fact that we are not yet prepared to gather criterion-referenced data on a nationwide basis, regardless of subject matter. Before such an assessment could begin, considerable instrument-development activities would have to be undertaken to develop appropriate measurement systems for the content areas and grade levels of interest.

It may be possible, as Quie suggests, to obtain national estimates of performance using just three grade levels; but ultimately these measurement systems will have to accommodate all grade levels. Such estimates could be useful for allocating funds to states, but would not be sufficient for targeting purposes, unless Quie intends entitlement to be restricted to these three grade levels. In short, if we are to employ performance criteria to identify educational disadvantage across the age range five to seventeen, we will need appropriate instruments to assess performance at each such age; thus, 12 age levels × 2 content areas = 24 tests.

The cost of developing criterion-referenced tests is not yet known, but can be estimated. The Minnemast Project (Hively, 1973) reports average costs for the development of fairly useful domain-referenced tests at $50,000 per content area × level. This projects a total cost of $1.2 million, if such estimates apply consistently across the total age range. On the other hand, the National Assessment test-development costs were in the neighborhood of $1 million per content area, and these tests were not designed to be used at all levels. It thus appears that the test-development costs alone could exceed $2.0 million. Furthermore, since large-scale applications of criterion-referenced measurement technology have still to be developed and validated,* the total instrumentation costs may ultimately become many times this figure.

Implementation Costs

Our analysis of probable costs of implementing HR 5163 has been restricted to those components which would be modified by the amendment. As such, these estimates are seen as probable costs over and above current administration and operating costs.

Three alternative programs for implementing HR 5163 might be as follows:

- Alternative A. Develop national performance estimates by grade level and content area; reformulate entitlement based on these data; and require states to supply eligibility and targeting data, using equivalent measures.

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*As Madaus and Elmore (1973) point out, Quie's assertion that the National Assessment and certain state assessment programs (e.g., Michigan) are currently using criterion-referenced testing is incorrect.

- Alternative B. Develop national performance estimates based on representative within-state samples; reformulate and allocate resources to states based on eligibility; and require states to determine local need, again using equivalent measures.
- Alternative C. Conduct a national assessment using a total census sample; reformulate entitlement criteria; allocate to states on the basis of eligibility, and allow states to use the national assessment data for purposes of distribution of program resources.

Alternatives A and B involve sampling procedures at the national and state-within-nation levels, respectively. Alternative C involves no sampling--the total United States and associated territories' population of school children would be tested--but it would be an enormous undertaking in cost and complexity. The goals in Alternatives A and B are to estimate the distribution parameters of the respective populations (or the proportion of the populations below some criterion value). The cost of each procedure can be estimated on the bases of fixed and incremental components associated with the data-collection operation. The major cost factor is seen as the sample size needed to minimize sampling error: i.e., to obtain estimates of the population of interest (nation, state, district) at a given level of precision and at a given confidence level.

If we assume a normal distribution, and our goal is to estimate the mean of this distribution, we can define the following table of sample-size requirements (see Table 1).

Entries in Table 1 can be read as indicating that a random sample of 27 would provide an estimate of the mean that, 95 percent of the time, would be within 5 percent (SD units) of the true population mean. Similarly, a random sample of 29,355 is necessary to estimate the mean at the 99 percent confidence level within average error limits of 0.5 percent.

If we disregard the shape of the distribution, but wish only to estimate what proportion meets or exceeds some known value (or criterion), a similar sampling table can be constructed.

Table 1

SAMPLING REQUIREMENTS FOR ESTIMATING THE MEAN OF THE DISTRIBUTION

		Level of Precision			
		5%	2%	1%	0.5%
Level of Confidence	.95	27	1,537	6,157	17,074
	.99	46	2,642	10,568	29,355

For example, Title I currently reaches 15 percent of the population. Assuming this level of effort would be retained, the goal becomes that of estimating the lowest 15 percent of the population on performance terms. The sampling requirements for this estimation problem are as shown in Table 2.

Obviously, these requirements are not greatly disparate from those needed to estimate the mean under assumptions of normality. In either case, the consideration of the precision of sample estimates is clearly the main factor in determining the costs of the operation. Two additional observations suggest that these costs will be relatively large.

Table 2

SAMPLING REQUIREMENTS FOR ESTIMATING THE LOWEST 15 PERCENT OF THE DISTRIBUTION

		Level of Precision			
		5%	2%	1%	0.5%
Level of Confidence	.95	196	1,224	4,898	19,592
	.99	339	2,122	8,487	33,948

(1) Sampling errors compound measurement errors. To the extent that the tests are unreliable, any errors due to small samples will further reduce the validity of resultant estimates. Thus, sampling errors which we have under our control must be minimized.

(2) Allocation errors, defined as the proportion of resources allocated versus the true proportional need, will be a direct consequence of sampling × measurement errors.

The importance of minimizing sampling error can be appreciated when it is seen that, assuming total program resources to be allocated are $1.5 billion, a one percent error in estimating needs will result in $2 million average allocation errors at the state levels, or $100 million overall.

In developing cost estimates for either of the sampling options (national, or state within nation), the following assumptions were employed:

- Testing would occur across three grade levels (as proposed by Quie).
- Test development represents a fixed cost of approximately $100,000 per grade level per content area, or a total of $600,000.
- A standard and uniform test-administration procedure would be employed throughout, using independent testing staff (not teachers) under high quality assurance requirements.
- Test-administration and processing costs would be incremental, but economy of scale would diminish, reaching an asymptote at $5 per pupil under large-scale conditions. Unit cost estimates, based on a log scale of declining unit cost as a function of sample size, are as follows:

Sample Size	Unit Cost (dollars)
100	$67
1,000	45
10,000	30
100,000	15
1,000,000	7

Given these working assumptions* and the previous sample requirement table, the estimated cost of generating national performance data (Program A) can be determined (see Table 3).

Table 3 shows that the probable costs of estimating national need (or the reformulation of Title I to performance criteria on a national basis) will be somewhere between 3/4 and 1-1/2 million dollars, if we

Table 3

ESTIMATED COSTS
OF GENERATING NATIONAL PERFORMANCE DATA
(Thousands of Dollars)

		Level of Precision			
		5%	2%	1%	0.5%
Level of Confidence	.95	658.1	834.4	1,111.0	1,418.3
	.99	663.8	887.8	1,284.1	1,530.6

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[*] It should be noted that these cost estimates compare very favorably (within 5 percent) to those independently developed for Representative Quie. In fact, the only notable difference between estimates supplied to Quie and those reported here is in our inclusion of an economy-of-scale cost reduction.

use just three grade levels. If we sampled all 12 grade levels (but excluded kindergarten) the costs would increase fourfold.

However, Program A does not provide a basis for action. States would have to utilize equivalent assessment procedures to develop estimates of their respective needs, and use these as a basis for allocation. Because of this duplication in testing, Program B appears to be a more sensible approach. The estimated costs of implementing Program B (conducting uniform performance assessments on random samples of students across three grade levels within each state) are displayed in Table 4 below:

Table 4

ESTIMATED COSTS OF CONDUCTING UNIFORM ASSESSMENTS
AT THREE GRADE LEVELS WITHIN EACH STATE
(Thousands of Dollars)

		Level of Precision			
		5%	2%	1%	0.5%
Level of Confidence	.95	812.0	6,413.8	9,879.5	18,577.7
	.99	891.5	6,594.5	13,331.6	27,069.5

These figures, which bear more directly on Quie's estimate of $5.6 million, show the cost of developing state allocation data. Quie's figure appears to allow an average state allocation error of more than 2 percent, or $4 million. Although for some states this might be acceptable, for large states (e.g., California and New York), such an error could easily exceed $40 million in program funds. But perhaps the greatest single deficiency of this sampling approach is that _it does not provide a basis for targeting funds to districts, schools, and pupils_.

Indeed, the two major components of HR 5163 are that federal assistance be targeted to individual pupils (in the form of individualized programs) on the basis of need defined in terms of individual performance compared against a national standard. These two components--the national standard and the individual locus--ultimately require that a single and uniform assessment procedure be applied to every potentially eligible student. In short, a national performance census is required.

Quie's assumption that state assessment programs can be used to develop this individual level data is unrealistic and unworkable. Very few states perform across-the-board assessments, and those that do use broad-range tests and variable procedures. To allow variability in assessment procedures is to introduce ambiguity into the definition of disadvantage.

The only alternative, that of a single census assessment, will be very costly. If we assume the per-pupil testing costs will average $5, then the total test cost will approach $250 million, or 1/6 of the total program budget. It may be possible to provide cost-sharing incentives to states, but the conclusion is inescapable; HR 5163 will be enormously expensive to implement properly.

As a final note on costs likely to be involved in implementing HR 5163, we need only briefly consider the diagnostic and individualization requirements. As proposed by Quie, this feature would involve the assessment of individual capabilities, current strengths and weaknesses, and the negotiation of a set of specific objectives, the attainment of which would be accomplished through individually prescribed methods. These are most certainly desirable features. But diagnosis of individual need at the level implied by Quie's testimony is a major psychometric undertaking. The average cost would probably be in the neighborhood of $50 per pupil. The negotiation of objectives involving student, teacher, and parent is complex, and may require a considerable amount of teacher time--possibly more than is available in many schools where resources are currently overextended. The use of specialists is not practical, since it is an additional cost and not in the spirit of the negotiation. The most costly component, however, is the requirement for individualization. It is not clear how such individualization could be accommodated in many current school systems, but it is clear that resources would be expensive. Follow Through projects which employ individualized methods show annual per-pupil costs of $800 and more in excess of average instructional expense. Since Title I shows an average per-pupil entitlement of $200, the program would have to be radically reformulated in scope or appropriations to provide for such educational services. In fact, we estimate that, under the current Title I appropriations, Quie's proposed individualized approach could be delivered adequately to less than 25 percent of the current Title I enrollment.

In summary, our analysis of cost factors associated with HR 5163 shows it to be an enormously expensive alternative to the current program. The required measurement devices and procedures would have to be developed and validated at a substantial cost. Also, the gathering of entitlement data could easily cost up to 1/6 of the total program appropriation. Finally, the diagnostic and individualization features would also add substantially to the cost of program services, and would probably require reductions in overall entitlement. Since our analyses are based on conservative estimates of component costs, we strongly recommend that thorough and detailed cost and feasibility studies be conducted before adopting HR 5163.

VI BENEFITS ANALYSIS

Our discussion of HR 5163 in the context of a benefits analysis focuses on four issues. These are:

(1) A consideration of general differences between current program recipients and those who would be served under Quie's proposed revision.

(2) Some consideration of probable redistribution of program allocations and the concomitant social and political consequences.

(3) A brief consideration of a potential negative incentive component of the program.

(4) Evaluation of overall Title I improvements due to HR 5163.

Participant Characteristics

The principal argument on which HR 5163 rests is that as the Title I program currently operates, a large segment of pupils performing poorly are excluded from participation in the program because they live in school districts (or other administrative units) which do not meet the eligibility criteria. The proposed redefinition of eligibility and program mechanisms would presumably overcome this condition, since program participation would become categorical in terms of student performance as opposed to social/economic conditions in districts or communities.

To examine the implications of this proposed redefinition of eligibility in terms of the program recipients and potential program results, it is convenient to describe three partially overlapping population sectors. These are:

- Sector 1. Pupils eligible for program participation on the basis of social/economic criteria.
- Sector 2. Pupils showing low academic achievement (or scoring below some standard).
- Sector 3. Pupils whose observed performance is below their potential, regardless of absolute level of performance (i.e., underperformers).

These three sectors of the elementary and secondary school population are diagrammed in Figure 1.

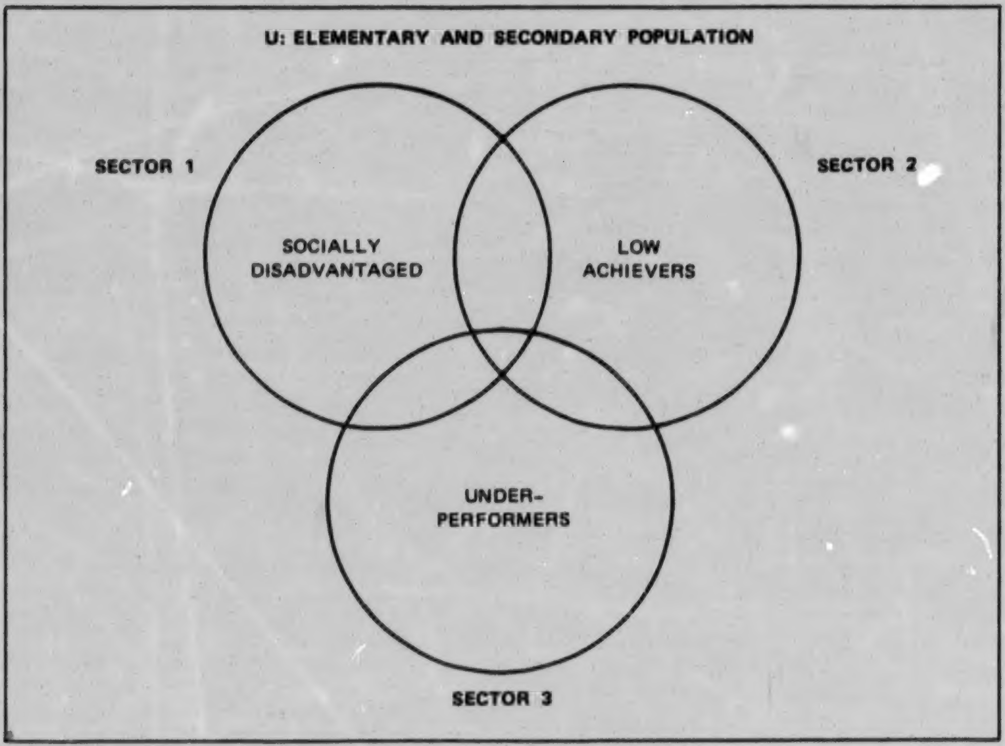
U: ELEMENTARY AND SECONDARY POPULATION
SECTOR 1
SECTOR 2
SOCIALLY DISADVANTAGED
LOW ACHIEVERS
UNDER-PERFORMERS
SECTOR 3

FIGURE 1 SET DIAGRAM OF POPULATION SECTORS INVOLVED IN TITLE I ELIGIBILITY ISSUES

Several important features of these population sectors are represented in this figure:

(1) Adjacent sectors are shown as overlapping, indicating some degree of intercorrelation.

(2) The relative overlap of Sectors 1 and 2 with Sector 3 indicates the upper bound of potential program effect. This is because underperformance is defined in terms of actual versus potential achievement. Logically speaking, when a pupil's actual performance level (or rate of growth) approaches his potential, he cannot benefit from any such program. Because "potential" is assumed fixed within the individual, he is already progressing at a rate consistent with his "level of ability."

(3) The sector defined as "underperformance"* (Sector 3) is independent of actual achievement level (high or low). For purposes of discussion, pupils who fall within this sector are those whose performance does not measure up to their ability.

(4) The overlap of Sectors 1 and 3 is intended to show the relative effect of socioeconomic factors on underachievement. Thus, only some portion of socially or economically disadvantaged pupils will tend to underperform. The actual overlap could be inferred from a correlation of the two conditions through use of the coefficient of determination (i.e., r^2).

(5) The relationship between low achievement and underperformance is similarly portrayed. This means that not all low achievers can be improved. Some are doubtless performing at their true ability level. Again, the proportion of low achievers who are underperformers (i.e., can be improved) could be estimated from knowledge of the correlation between these two conditions.

(6) The two "disadvantage" conditions (Sectors 1 and 2) are not totally independent, and are diagrammed to show some overlap; but they are not perfectly correlated.

We believe this is a fairly reasonable representation of the conceptual aspects of the eligibility problem. If the intercorrelations among these three sectors, as well as the number of pupils within each sector, were currently known, it would be possible to determine which eligibility criterion--poverty or poor performance--is, in fact, a more accurate proxy for underperformance.

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*The term "underperformance" is chosen instead of "underachievement" because the latter term carries many surplus connotations regarding the interpretation of achievement.

Given the substantial costs associated with collecting performance data on a nationwide scale for use in targeting, it is apparent that overlap between Sectors 2 and 3 must be significantly larger than that between Sectors 1 and 3, in order for the performance-based targeting approach to be preferable to the current approach from a cost-effectiveness viewpoint.

Even in the absence of empirical data regarding these parameters, some reasonable estimates can be made. For example, it is likely that the sizes of Sectors 1 and 2 will be nearly equal, no matter what. This is because there are finite resources which are allocated on a per-pupil basis. Thus, category definitions tend to be modified to match the resources, rather than the reverse. The question then becomes "Which sector of pupils should the program be designed to assist?" The answer to this question must include consideration of legislative intent, for its answer ultimately determines the policy of the program.

Redistribution Consequences

Since we already know that poverty and low performance are only partly correlated, it follows that substantial changes in the flow or distribution pattern of program resources would accompany Quie's proposed change in the definition of eligibility. It also follows that any such change will have to reduce the amount of funds available to the poorest districts, and to some extent, increase the funds available to more affluent districts. A general question then can be raised regarding the likely political and social consequences of this redefinition. Clearly, suburban areas which are virtually excluded from Title I participation at present will experience some support under the revised definition. A question might be raised whether a primary source of this new support would be a shifting of resources from central city urban school districts, from rural nonindustrial districts, or from both. A second level of concern might regard the general pattern of redistribution or reallocation at the state level. For example, it has been known for some time that on the basis of draft induction examinations, states throughout the nation order themselves in a quite unmistakable pattern, with Mid-West farm states being at the upper end and Southern states occupying the low end of the distributions. If this pattern repeats itself with pupil-performance data, then some flow of resources from non-Southern to Southern states would occur. Anticipated redistributions of Title I funds have resulted in the emergence of what are called "hold harmless" provisions. These provisions essentially guarantee that at least some proportion of current allocations will remain in situ, regardless of changes in eligibility brought about either by population or economic shifts, or by reformulation of entitlement. The details of probable redistributions and some discussion of their likely consequences are presented in a companion paper to this.

Negative Incentive

As mentioned earlier in this paper, concerns have been raised regarding the potential of the Quie Bill for producing a general negative incentive. Briefly, according to this perspective, programs which succeed in promoting positive pupil growth (so that pupils perform at or above the eligibility criterion) would risk loss of future funds, whereas those programs least successful in stimulating growth would be virtually assured of continuing allocations at or above their current levels. Although the problem of potential negative incentive applies to most programs of social assistance, its potency is hard to estimate in this instance. One possible mechanism for resolving this dilemma would be to provide for the continued support of those approaches which most effectively removed evidence of disadvantage and to require the installing of new approaches where evidence of improvement failed to occur.

Overall Evaluation

The evaluation of the general approach embodied within HR 5163 can be viewed as a study of the feasibility of conducting effective large-scale social intervention programs at the federal level. Given the current degree of state and local educational autonomy and the enormous concomitant variability in administration, governance, curriculum, and so forth, the following question becomes important: To what extent can or should a federally administered program uniformly influence state and local educational policies, practices, and outcomes? A subsidiary question becomes: To what extent are major provisions and guidelines of such a federal program being uniformly interpreted and followed by state and local agencies? One factor which deserves special consideration is the extent to which the use of performance criteria will result in any appreciable improvements in program administration and results over the current criteria. As suggested in previous discussions, such demonstrated superiority would be necessary to offset the additional costs of obtaining performance data. But when we realize that the variance in appropriateness at the local level of a national performance standard probably greatly exceeds that of a national economic standard, such improved administrative effectiveness seems at best questionable.

VII CONCLUSIONS

Based on our study of ESEA Title I and the proposed alternative, HR 5163, the following conclusions may be advanced.

- Title I, as currently administered, reveals a number of deficiencies and problems in the equitable allocation of resources, in the targeting of recipients, and in the delivery of program services. Current allocation and entitlement procedures are, with much justification, criticized as somewhat invalid (the relationship between poverty and educational need is only moderate); unreliable (census data become obsolete too soon; welfare data are too variable); and often inequitable. Also, because services are targeted to LEAs instead of individual pupils, program resources tend to be diffused at the LEA level, and many children who show need do not receive program benefits because they are enrolled in schools which do not meet current eligibility criteria.
- Quie's amendment (HR 5163) is a bold attempt to remedy these program inadequacies both by defining educational disadvantage in test-performance terms and by focusing program services at the level of the individual student.

  However, Quie's solution constitutes a fundamental reformulation of ESEA, Title I, and contains a number of major, complex and costly implications. For example, it would:

  - Constitute a change in Title I's legislating philosophy from equal educational opportunity to equal educational performance.
  - Require the specification of national-level standards for educational attainment, and perhaps impose national curricula.
  - Require the development and utilization of uniform criterion-referenced test procedures on a massive and enormously expensive ($250 million) national scale.
  - Probably cause major redistribution of resources because of varying SES, community and state characteristics.

- Be dependent on the diagnosis, prescription and administration of costly individually planned instructional programs, and would be expected to increase per-pupil program expenditures substuntially.
- Provide negative incentive which might act against effective approaches.

• Our conclusion is that the basic features of HR 5163 represent desirable goals and procedures which could be incorporated within educational programs designed at the level of LEA or SEA. They do not, in our opinion, represent acceptable solutions for Title I targeting or allocation problems, and we recommend that this amendment not be adopted.

REFERENCES

Baker, E. L.,"Beyond Objectives: Domain Referenced Tests for Evaluation and Instructional Improvement," Educational Technology (December 1973).

Duncan, A. D., ed., Teaching Exceptional Children, Vol. 3 (Spring 1971).

Emrick, J. A.,"An Evaluation Model for Mastery Testing," Journal of Educational Measurement, Vol. 8, pp. 321-326 (1971).

Emrick, J. A., P. H. Sorensen, and M. S. Stearns, "Interim Evaluation of the National Follow Through Program 1969-1971," SRI, Menlo Park, California (February 1973).

Finch, R. H.,"History of Title I ESEA," U.S. Department of Health, Education, and Welfare, Office of Education, Washington, D.C. (June 1969).

Garvin, A. D.,"The Applicability of Criterion-Referenced Measurement by Content Area and Level," Criterion-Referenced Measurement: An Introduction, W. J. Popham, ed. (Educational Technology Publications, Englewood Cliffs, New Jersey, 1971).

Glaser, R.,"A Criterion-Referenced Test," Criterion-Referenced Measurement: An Introduction, W. J. Popham, ed. (Educational Technology Publications, Englewood Cliffs, New Jersey, 1971).

Hambleton, R. K. and M. R. Novick, "Toward an Integration of Theory and Method for Criterion-Referenced Tests," Journal of Educational Measurement, Vol. 10, pp. 159-170 (1973).

Hively, W., H. L. Patterson, and S. H. Page, "A 'Universe-Defined' System of Arithmetic Achievement Tests," Journal of Educational Measurement, Vol. 5, pp. 275-290 (1968).

Hively, W. et al., "Domain-Referenced Curriculum Evaluation: A Technical Handbook and a Case Study from the MINNEMAST Project," CSE Monograph Series in Evaluation, No. 1, Los Angeles, California: UCLA Center for the Study of Evaluation (1973).

Madaus, G. and R. F. Elmore, "Allocation of Federal Compensatory Education Funds on the Basis of Pupil Achievement Test Performance," statement submitted to the General Education Subcommittee of the Committee on Education and Labor, U.S. House of Representatives, Huron Institute, Cambridge, Massachusetts (June 1973).

Mason, W. S., "Problems of Measurement and the NIE Program," National Institute of Education, Washington, D.C. (August 1973).

Millman, J., "Passing Scores and Test Lengths for Domain-Referenced Measures," Review of Educational Research, Vol. 43, pp. 205-216 (Spring 1973).

National Advisory Council on the Education of Disadvantaged Children, "Annual Report to the President and the Congress, 1972. Educating the Disadvantaged Child: Where We Stand," United States Government Printing Office, Washington, D.C. (1972).

Passow, A. H.,"Compensatory Instructional Intervention," Review of Research in Education, 2, J. Carroll and F. Kerlinger, eds. (F. E. Peacock Publishers, Incorporated, Ithaca, Illinois, to be published April 1974).

Quie, A. H.,"Assessment of Educational Disadvantage--Title I, ESEA," Congressional Record, H 1404-H1407 (6 March 1973).

Suchman, E. A.,"Evaluating Education Programs," Readings in Evaluation Research, F. G. Caro, ed. (Russell Sage Foundation, New York, New York, 1971).

U.S. Office of Education, Title I ESEA Program Guides Numbers 44 and 45-A, United States Government Printing Office, Washington, D.C. (1969).

Appendix A

NORM-REFERENCED MEASUREMENT IN AMERICAN EDUCATION

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NORM-REFERENCED MEASUREMENT IN AMERICAN EDUCATION

Over the last decade a movement advocating a major reform in educational measurement and evaluation practices has been gaining in both momentum and support. The roots of this movement stem from a relatively widespread dissatisfaction with standardized testing programs and their attendant limitations and restrictions. By far the most common application of standardized testing programs is the assessment of student progress in general intellectual development--namely scholastic achievement--at selected points throughout the student's academic career. Standardized testing is big business in American education today. A typical student may expect to be assessed by a standardized achievement battery six times throughout his academic career, and certainly more often if he proceeds to higher education. In all, current estimates place the number of standardized tests administered within a given year at somewhere between 150 and 250 million (Mason, 1973).

In order to appreciate fully the extent to which standardized achievement testing is entrenched in the current American educational system, it is necessary to review its history briefly. According to most experts, the practice of utilizing a single comprehensive index of educational progress--namely, an achievement test score, interpreted in an age-placement, grade-placement, or distribution-referenced (percentile, stanine, CEEB, T, or other standardized) scale--is a relatively recent phenomenon. Its origin is traceable to the ability-testing movement which was a byproduct of the standardized ability-screening procedures (the army alpha tests) developed during World War I.* What these army alpha tests showed was that individual differences in complex traits such as general intelligence could be reasonably well measured by group-administered paper and pencil tests. It was a relatively short period of time before these methodological developments were incorporated into educational testing practices, and with the appearance of the Stanford Achievement Test in 1923, the era of standardized achievement testing was launched.

It is not hard to understand why standardized testing was so readily adopted within the American educational system. It is relatively compatible with contemporary American educational philosophy, which supports uniform comprehensive instruction for all pupils. Since achievement tests are designed toward breadth rather than specificity in content, they can be used to provide useful general indexes of overall educational progress throughout the nation, under the assumption that regional or local variations in curricular emphasis will balance out. The principle of equal opportunity for all constituents, which guides the American educational system, virtually guarantees more or less uniform educational experiences to all consumers in the form of elementary and secondary schooling. In this sense, the American educational system is perhaps unique in the world. Educational systems in other cultures and societies frequently channel individuals into differential educational programs on the basis of relatively well-defined criteria such as ability, class, and need. Since such channeling has determining consequences regarding subsequent occupational and social status, a great deal of emphasis is placed on the decision-making criteria at the level of the individual. Performance tests generally play a significant role in the decision-making process. An example is the set of comprehensive tests known as the "eleven plus" examinations administered to English pupils. The type of secondary school a pupil will attend is highly dependent on his performance on these tests (along with his socioeconomic background).

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*Ironically, these screening and classification tests, which supplied the technology for the subsequent proliferation of aptitude and achievement testing, more closely approximated criterion-referenced tests than norm-referenced tests in their purpose and use.

In the United States, however, no such formal career/occupational branch points can be found. The educational institutions up to and including college are available to every member of the society, and most educational decisions which help to define the range of subsequently available careers are ostensibly left to the individual. With respect to the individual student, standardized tests may serve to guide decisions, but they are generally interpreted in conjunction with other measures and predictors of future performance. For example, when university officials must select incoming students from among a group of applicants, they generally take into consideration not only scores obtained on standardized entrance examinations but also high school transcripts and other indications of scholastic and extracurricular background. Achievement testing then functions primarily as a feedback device at the most general level--describing how the system as a whole is operating in the production of intellectual and academic growth.

Development of Standardized Tests and Norms

Nearly all examples of educational and psychological measuring instruments that have emerged in the last half century can be classified as norm-referenced. In the field of psychometrics, how a measuring instrument is classified depends primarily on how the instrument was initially developed and how it is used in the measuring situation. As will be shown later, it is virtually impossible to distinguish a norm-referenced test from a criterion-referenced or domain-referenced test on the basis of mere inspection of the instrument.

The fundamental theorem underlying all distribution-referenced measurement* is that on any well-defined trait or ability individuals will differ or distribute themselves along some continuum of knowledge or skill attainment. The goal of measurement, therefore, becomes not so much the task of assessing the magnitude of a given trait within an individual, but rather that of characterizing or distributing individuals along this assumed underlying continuum. With this goal in mind, two considerations are foremost in the development of such a distribution-referenced test. The first is to obtain a valid set of indicators for this assumed underlying continuum. The second is that of obtaining maximal discrimination of individuals along this continuum. Hence, the utility of a given measure depends on the extent to which it reliably differentiates or "orders" individuals along some psychological or behavioral continuum and the extent to which performance on the test can be argued or demonstrated as validly representing this continuum. For the majority of contemporary educational measures, the validity of the test is assured through consultation with subject matter experts and development of items based on commonly used curricula. The reliability of these measures--that is, the ability of these measures to order examinees consistently--is established through item analysis procedures. An ideal distribution-referenced test, then, is one which (1) consists of a representative sample of items relevant to the domain in question, and (2) has the property that responses to items are only moderately intercorrelated (optimal r = .5) and display moderate difficulty in terms of probability of pass (optimal level = .5). Under such conditions, the test displays maximum spread of examinees (reliability) and can be argued as a valid mechanism for distributing individuals on a trait or dimension of interest.

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*The labels "norm-referenced" and "distribution-referenced" can be used interchangeably in describing conventional educational measuring devices.

Since at best this approach to measurement will only yield a rank ordering of individuals, the use of norm groupings is introduced to provide a basis for interpreting performance on these measures. A norm group consists of any well-defined population of examinees which has been distributed on the instrument in question and whose performance on this instrument can be used as a reference for interpretation of new data. It is very important to recognize that a norm is not in any way equivalent to a standard; rather, a norm is the performance distribution on the measuring instrument of a selected sample of examinees, collected at a certain time and under certain testing conditions. To the extent that these prior conditions--the representativeness of the sample, the testing conditions and the time of testing--are relevant or can be extrapolated to recurrent testing conditions, the norm will be useful as a basis for interpreting subsequent distributions of scores on the instrument. Thus it is possible to generate virtually an infinite number of norms for any given test. As a practical matter, however, achievement battery norms supplied for conventional standardized achievement tests are obtained on more or less (quite often less) representative samples of pupil populations sampled across the nation at various grade-level strata. Also, the content of conventional standardized achievement tests is generally sampled from common curricula contained in instructional materials used at the time of test development and supplied by subject-matter experts. Thus, the ideal achievement test would represent a cross-section of all curricula within a given content area such as mathematics or reading; and the test would be standardized on a nationally representative cross-section of pupils.

Distributional normative interpretations are obtained by comparing the performance of a selected sample to the performance of the norm sample at the same age and grade levels. Age- or grade-placement interpretations represent the typical (mean) performance of different strata of the standardization sample on the test. For example, a norm-referenced interpretation of performance at the third-grade level on a reading test would likely mean the average score of third graders on this instrument at some point during their school year. To say a first grader can score at the third-grade level is not to say that he is doing third-grade work, but rather that his score equals the average of third graders on this test.

Limitations and Criticisms

As should be evident from the preceding considerations, the principal vulnerabilities of this distribution-referenced measuring approach are found in (1) the validity of the test content to the testing problem at hand, and (2) the representativeness of the norming sample in the development of standardization data. The most frequent criticisms one encounters regarding distribution-referenced tests are (1) that the test is composed of items sampling content which is not part of the curriculum repertoire of the examinees, and (2) that population or distinct subgroup differences exist between the norm sample and the subgroup sample.

These criticisms are generally aimed at particular instruments. Arguments which have been advanced against the distribution-referenced approach in general will be discussed below.

Both of these criticisms have potentially profound implications regarding the interpretation of performance on such a test. The first criticism, that of content or construct validity, is plausible since we do not at this time maintain a national curriculum. Educational autonomy is highly valued and deeply entrenched in the concept of the neighborhood school. Hence, national-level measuring approaches can only sample from a fairly wide spectrum of local curricula, with a consequent reduction in the interpretive validity of any performance on such nationally developed tests. It may be argued, however, that achievement tests probably do validly assess intellectual development on a relatively general level. That is, to the extent that curricula within an individual district or school are promoting improvement in performance along relatively general educational dimensions or learning dimensions, the performance of the test sample on an instrument should validly reflect their position along this dimension. But since items which make up standardized tests cut across many domains, and since the tests are designed to provide maximal distribution of examinees, the precision of estimation of performance of any individual on such a test is very low. The stability of a group of individuals on such a test is relatively high, since individual variations tend to balance out within the group. As such, standardized achievement tests have relatively low utility for individual diagnosis and assessment of individual progress.

The implication of the second criticism, that of the bias or non-representativeness of the norming sample, is more difficult to assess. What we do know regarding procedures, however, suggests that this may be the more serious category of problems. Publishers generally attempt to gather normative data on a reasonably representative cross-section of the population. However, normative data are generally gathered on a strictly voluntary basis, resulting in a compliance or participation rate of approximately 60% of the original norming samples. If participation in norming studies is differential as a function of any meaningful population or ability dimensions, then serious biases or invalidities exist in the resultant norm data. An example of these potential biases is the possibility that teachers might choose to report only data from their superior students. This would naturally displace the distribution of scores upward, so that the mean of the norm sample would be quite different than the mean of the more representative national sample. Another example might be biases due to regional differences in curricula that were not sampled in the norm group. Such biases could easily restrict the range of the norm distribution. Further complications could occur with respect to cultural subgroups not adequately represented in national norms. Moreover, any systematic performance differences that are influenced by cultural factors are clear sources of invalidity in the measure itself. This potential bias has been long recognized, and attempts to deal with it have emerged in the form of culture-fair or culture-free measures. However, as has been noted, most of these efforts yield tests that more closely approximate IQ than achievement dimensions.

Finally, some questions relate to the utility of subgroup comparisons on distribution-referenced tests. As indicated previously, distribution-referenced tests are not designed to measure the amount learned or achieved as such, but only how the examinees differ as to abilities or behaviors. When these kinds of measures are used to assess the performance of a particular group, judgments can only be made with respect to the performance of some norm group. Thus, the interpretation is always relative. The norm group may be at or below some desirable level, but this fact would never be detectable from a norm-referenced measure. The country as a whole may be producing poor readers. A norm-referenced test would only tell us whether and to what extent our examinees were poorer or better than some norming group.

Appendix B

CATEGORIES OF CRITERION-REFERENCED MEASUREMENT

Appendix B

CATEGORIES OF CRITERION-REFERENCED MEASUREMENT

Objectives-Based Testing is generally thought of as a byproduct of the programmed instruction trend of the early 1960s. With the advent of the technology for programmed instruction, the need for clearly defined branch or terminal points in instructional sequences became apparent. At the same time, renewed emphasis was placed on the development of operational language for specifying educational goals in the form of behavioral objectives. The rationale appears to be as follows: To the extent that educators can clearly specify in behavioral or equivalent terms those short-range educational goals which their curricula comprise, they will be better equipped to monitor both the progress of their students and their own effectiveness in attaining long-range educational goals. Measuring attainment of such objectives becomes a matter of

(1) Defining the criterion or terminal behaviors relevant to the objectives.

(2) Defining the measurement conditions under which assessment of the objectives would be made.

The biggest shortcoming of this objectives-based approach appears to be the possibility that objectives will be measured qua objectives--that the measurement process will not be carried beyond the specific short-range objectives whose relevance to long-range goals is not necessarily established (Baker, 1973).

Mastery Testing represents an attempt to overcome the principal shortcomings of objectives-based testing by linking the measurement procedure (test content and interpretive criteria) to relatively well-formulated models or theories of learning and instruction.

Most often mastery testing is developed and implemented within some decision-theoretic framework where test decisions are individualized and where the measurement goal is that of systematically evaluating student progress toward attainment of explicit educational objectives (Emrick, 1971). Substantial controversy still rages regarding whether mastery should be considered a binary (on-off) or continuous phenomenon. At a more applied level, the controversy translates to the following questions:

- How to define the performance level required to exhibit mastery.
- How to estimate measurement error and reliability on mastery tests.
- How to validate mastery criteria.
- Whether different criteria ought to exist for different examinees.

Until the issues raised above can be sufficiently resolved, mastery testing will probably not be a practical alternative to more conventional teacher-made tests (similar to the objectives-based concept). Furthermore, the mastery-testing approach applied to group-testing situations (e.g., classroom testing) would result in interpretations such as "proportion (or number) of students reaching mastery," instead of "average level of attainment."

Domain-Referenced Testing is designed to assess the magnitude or degree of attainment of some well-defined skill or psychological domain by the examinee. Although items on distribution-referenced tests can generally be grouped into domains, the norm-referencing procedure anchors the interpretation of test scores to the performance of the norm group, and hence does not allow judgments regarding differential attainment of the domain in question in an absolute sense. With domain-referenced testing, performance of the examinee can be directly generalized to the educational or psychological domain being measured, and will produce an interpretation in the form of "amount known." Unlike mastery testing, domain-referenced measurement does not require the use of standards or cutoff scores, although such criteria may be used. In a sense, norm-referenced and domain-referenced testing procedures are complementary, and it is conceivable that a single test could be used in both applications.

Construction and validation of a domain-referenced test are fairly imposing tasks. However, this approach offers several advantages over other measurement methods. Baker (1973) argues that rules for determining the range of content for a domain specify the characteristics common to eligible examples of content, and thus help to focus test construction on generalizable skills. For this reason, domains are less subject to triviality than are objectives, which may be based on only a single example of content.

It would appear that some domains lend themselves to this testing approach more readily than others. For example, Hively et al. (1968) have shown that mathematics is a domain particularly amenable to this testing methodology. More recent developments have shown that reading is also amenable to domain-referencing, although relevant domains are not as precisely definable as those in mathematics. Recent work in the area of affective growth and development (Duncan, 1971) has yielded some promising results regarding the definitions of domains.

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Educational Policy Research Center

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Research Report
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THE USE OF PERFORMANCE CRITERIA TO ALLOCATE COMPENSATORY EDUCATION FUNDS

Fiscal Issues: Resource Redistribution Consequences of the Use of Performance Criteria

Prepared for:

OFFICE OF THE ASSISTANT SECRETARY
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I INTRODUCTION

Poverty or pupil performance, which is the better criterion for distributing money for schools? Which is the better measure of that elusive condition, "educational need?" Which measure is the most consistent with the function of schools? Which distributes school funds in the most equitable manner? Which is the most acceptable politically?

These are a sample of the finance issues being argued with increasing frequency by school policymakers. The outcome of the debate is far from inconsequential. Upon the answers to such questions hinges the level of educational service to be offered to millions of school children, the numbers of teachers and administrators who will be hired or who will need to find new jobs, and the level of financing available to thousands of school districts across all fifty states.

Study Purpose and Method

Our purpose in this paper is to suggest answers to at least a few of the foregoing questions. Specifically, in what follows, we examine the distributional consequences of shifting from a poverty to a pupil performance allocation criterion. Our conclusions are briefly summarized in Section II of this report. The subsequent sections provide the results from the following analyses.

By using information from 13 states that have statewide testing programs, we compare the flow of federal funds under the present ESEA Title I proverty formula with the dollar distribution that would result from using pupil performance measures. Additionally, by using data from the 1970 Census, we assess the distributional consequences of changing the present Title I low income formula to alternative definitions of poverty. By using computer simulations, we illustrate these funding shifts under various allocation criteria for school districts within states and among states themselves.

Within states we focus further on the degree to which Title I formula changes would be advantageous to cities, suburbs, or rural areas. Moreover, we analyze the distributional effects of poverty criteria--both the present ESEA formula and proposed poverty measures--versus performance indicators for ethnic groups such as Blacks, Chicanos, Asians, and Indians. After describing the results of such analyses, we conclude with simulations of our own funding proposals and offer our opinions as to the merits and demerits of the two sets of criteria.

Details of our findings for California only are included in the main text, but significantly different results from other states are so noted. The detailed results for the other 12 states are contained in the appendices.

Background

School policymakers and finance experts are continually engaged in a search for better measures by which to determine the distribution of school resources. To be adopted and incorporated into statute, a new distribution measure must withstand an awesome battery of tests: for example, it must be rooted in readily available information, it must bear some relation to schools, and it must disperse funds in a politically acceptable pattern.

Until recently, school finance distribution formulas that met such tests were relatively devoid of concern for the personal characteristics of pupils. The federal government, states, and local school districts disbursed funds as though all pupils were alike. The only widespread exception to this practice occurred in states that provided additional funds to school districts for secondary school students, on the assumption that their schooling was, and should be, more costly than the services delivered to children in the early grades.

Passage of the Elementary and Secondary Education Act in 1965 marked a turning point in school finance, not only because of the unprecedented magnitude of the federal funds involved but also because, for the first time, a major distribution formula was based, however clumsily, on the personal characteristics of students. Embedded within the ESEA Title I formula was the notion that children from low income families needed more school services if they were to compete equally with their more fortunate counterparts from higher income families. The formula provided in a general way that school districts with concentrations of low income children should spend half again as much for their schooling.

Even though passed in 1965, the poverty component of the Title I formula has never been free of debate. During enactment, formula opponents argued that income measures were inappropriate. Since 1965, the debate has expanded as more and more state legislatures have considered one or another pupil weighting provision as part of revised school finance formulas. The same questions arise upon occasion even within school districts. For example, the New York City decentralization plan permits schools with an added burden of pupils with low reading scores to receive preference in the distribution of district resources.

In 1971, the Michigan legislature decided in favor of using test scores as an allocation criterion. At present, a school district in that state may receive up to $200 annually for each pupil who scores in the 15 percentile or below on a state administered reading achievement test. The Fleischmann Commission, charged with examining New York State's educational system and suggesting directions for future policy, recommended a school finance formula that relied heavily upon pupil test measures as a criterion for distributing state compensatory education funds.[1]* Similarly, a report recommended that California implement a formula in which compensatory education funds were allocated on the basis of pupil test scores, as well as measures of their family's income.[2]

During the 93rd Congress, debate on poverty versus performance measures became more intense because of a proposal before Congress to alter the ESEA Title I distribution formula. In March of 1973, Congressman Albert Quie, ranking minority member on the House Education and Labor Committee, introduced H.R. 5163. This bill, among other features, proposed the foundation of a National Commission on Educational Disadvantage. The Commission was to be charged with overseeing development and administration of tests that would assess pupils' level of reading and mathematics comprehension within each state and for the nation as a whole. The bill intended that the results of such a testing program be substituted for Census and other family income measures in the Title I distribution formula.

In congressional hearings following introduction of H.R. 5163, a number of questions were raised regarding the consequences of distributing school aid dollars on the basis of test scores. For example, some opponents of the bill argued that the state of the testing art is too primitive to permit assessment of student learning with the necessary level of precision. Others expressed the fear that payments based on low achievement would act as incentives for school personnel either to manipulate test score results directly or not to teach students so that they would score poorly. Opposition was also voiced by those fearful that financial payments attached to reading and mathematics performance would distort the school curriculum to the detriment of art, music, history, and other subjects outside the strict confines of the "3 Rs."

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*The references are listed after the final section of this report.

Supporters of the Quie proposal argued that many of the previously cited disadvantages could be overcome.[3] Moreover, they asserted that the bill had two principal advantages. First, it would base aid on a school related measure. They reminded their adversaries that the correlation between poverty and low scholastic performance is not perfect; not every child from low income families performs poorly in school. By using tests as an allocation criteria, money would be focused on students who most need it. Second, the bill's proponents pointed to the flaws embedded in the present income distribution criterion. Published Census data are consistently four to fourteen years out of date and AFDC poverty measures are not standard among and within states (Appendix A discusses these problems further); current practices do not prevent dishonesty in counting low-income children, a number of low-income children are not even enrolled in school--or if enrolled, do not attend regularly.

The debate has been further complicated by those who would retain poverty and reject test scores as an allocation criterion, but who desire that a suitable alternative to the present poverty measure be identified and embedded in ESEA Title I. In this regard, changing the annual income figure from $2,000 or $3,000 to something higher--$4,000, $5,000, or $6,000--has been suggested. More radical yet, it has been recommended that family annual income be rejected altogether and be replaced by a more complicated index of family poverty.

At this writing (Summer 1974), the House and Senate have compromised on a new measure of poverty, a combination of the so-called Orshansky index (see Appendix B) and a count of welfare children. Congress has rejected the pupil performance allocation proposals. However, the new Title I formula will not end the debate: This new poverty measure is itself imperfect, and continued efforts to revise it are likely. In what follows, our intent is to inform the future debate by suggesting answers to questions regarding the distributional effects of the two allocation strategies.

II PRESENT POVERTY VERSUS TEST SCORE CRITERIA

In this section we describe first the shifts of Title I funds that would take place within states if the original poverty formula were exchanged for one based on test scores; we then describe possible shifts of funds among the states.

Intrastate Analyses

In order to simulate such change within a state, we first identified all states that conduct pupil testing programs.[4] From this universe, we selected those states whose test results permitted generalizations to all school districts within their borders. We were then able to compare school districts' low income children relative to their low scoring children.

A total of seven states (see Table 1) provided data upon which to simulate the intrastate redistributional effects of switching to a pupil test score criterion for Title I allocation. Summary tables of the findings for California, and interpretations of these tables, are given in the following pages. Highlights of our findings for the other states are also presented, but the summary tables for them appear in Appendix D.

California's School Districts

Table 2 categorizes California's school districts in terms of the proportion of their students at present eligible under Title I and then displays the gains and losses that would occur if various test score percentiles were used as the definition of low achievement for purposes of determining Title I allocations. Column 1 contains eight classifications of California school districts, based on the proportion of their

Table 1

STATES AND TESTS USED IN INTRASTATE ANALYSES

State	Test	Grade	Level and Form	Date Tested
Alabama	CAT[*]	4	Level 3, Form A	Spring 1973
California	CTBS[†]	6	Level 2, Form Q	Spring 1973
Delaware	STEP[‡]	4	--	Spring 1973
Hawaii	STEP			
Iowa	ITBS[§]	6	Forms 5 or 6	February 1973
Massachusetts	CTBS	4	Level 1, Form Q	January 1971
New Mexico	CTBS	5	Level 2, Form R	October 1972

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[*] California Achievement Test.

[†] Comprehensive Tests of Basic Skills.

[‡] Sequential Tests of Educational Progress (in Delaware, modified to state specifications).

[§] Iowa Test of Basic Skills.

students who are Title I eligible. For example, in Row 1 of Column 1 are those districts that have from none to 5 percent of their enrollments eligible for Title I benefits. Column 2 displays the fact that there are a total of 264 school districts in the state which fall into the 0-5 percent category. Column 3 states that those 264 school districts have a combined pupil population of 845,290. Column 4 displays the proportion of all California's Title I funds received by school districts in this 0-5 percent category: these 264 districts collect 4.26 percent of all California Title I money.

Columns 5 through 10 display the results of our simulations. Each of these columns represents a different test score criterion--percentile cutoff point--for statewide achievement tests. Within each column is

Table 2

CALIFORNIA: PROPORTIONAL DIFFERENCES IN FUNDING BETWEEN POVERTY VERSUS TEST SCORE CRITERIA

				Proposed Test Score Percentile Cutoffs Defining Low Achievers					
Percent of Children in District Now Qualifying for Title I Funds (1)	Number of School Districts (2)	Total Aggregate Enrollment (3)	Present Percent of Title I Children (4)	10 Pctl. District Share (5)	15 Pctl. District Share (6)	20 Pctl. District Share (7)	25 Pctl. District Share (8)	30 Pctl. District Share (9)	35 Pctl. District Share (10)
1. 0-5 %	264	845,290	4.26	7.73	8.66	9.53	10.32	11.11	11.73
2. 5-10%	280	1,183,474	14.46	19.78	20.60	21.51	22.43	23.20	23.79
3. 10-15%	186	648,390	12.20	13.52	13.81	14.17	14.25	14.36	14.45
4. 15-20%	116	386,324	10.79	10.61	10.42	10.44	10.28	10.16	9.99
5. 20-25%	78	420,615	14.93	11.36	11.29	11.09	10.95	10.80	10.71
6. 25-30%	53	738,534	30.28	27.42	26.01	24.66	23.60	22.62	21.84
7. 30-35%	12	106,540	5.38	3.43	3.38	3.24	3.15	3.03	2.95
8. Over 35%	26	118,932	7.71	6.15	5.83	5.35	5.02	4.72	4.53

displayed the proportion of California's total Title I appropriation which school districts in that category would receive if the low achievement allocation criterion were established at its particular percentile level. For example, in Column 5, we see that the 264 districts in the 0-5 percent range would receive 7.73 percent of California's Title I money if a 10th percentile cutoff point were used for distributing funds. These same districts, Column 10 shows, would receive 11.73 percent if the criterion were changed to the 35th percentile. Allocations at each of these percentile intervals, from 10th to 35th, should be contrasted with the proportion appearing in Column 4. Notice that districts which at present have relatively few poor children (the 0-5 percent category) would benefit substantially in added Title I funds should an achievement criterion be used instead of the present income measures.

In contrast, districts that are heavily populated by poverty children--35 percent or more of enrollments, as shown in Row 8--at present receive 7.71 percent of all of California's Title I funds. Columns 5 through 10 show clearly that these 26 districts would suffer from the proposed move to a low achievement allocation criterion. The proportion of statewide Title I funds they would receive would drop to 6.15 percent under the 10th percentile low achievement cutoff, and to 4.53 percent under a 35th percentile cutoff.

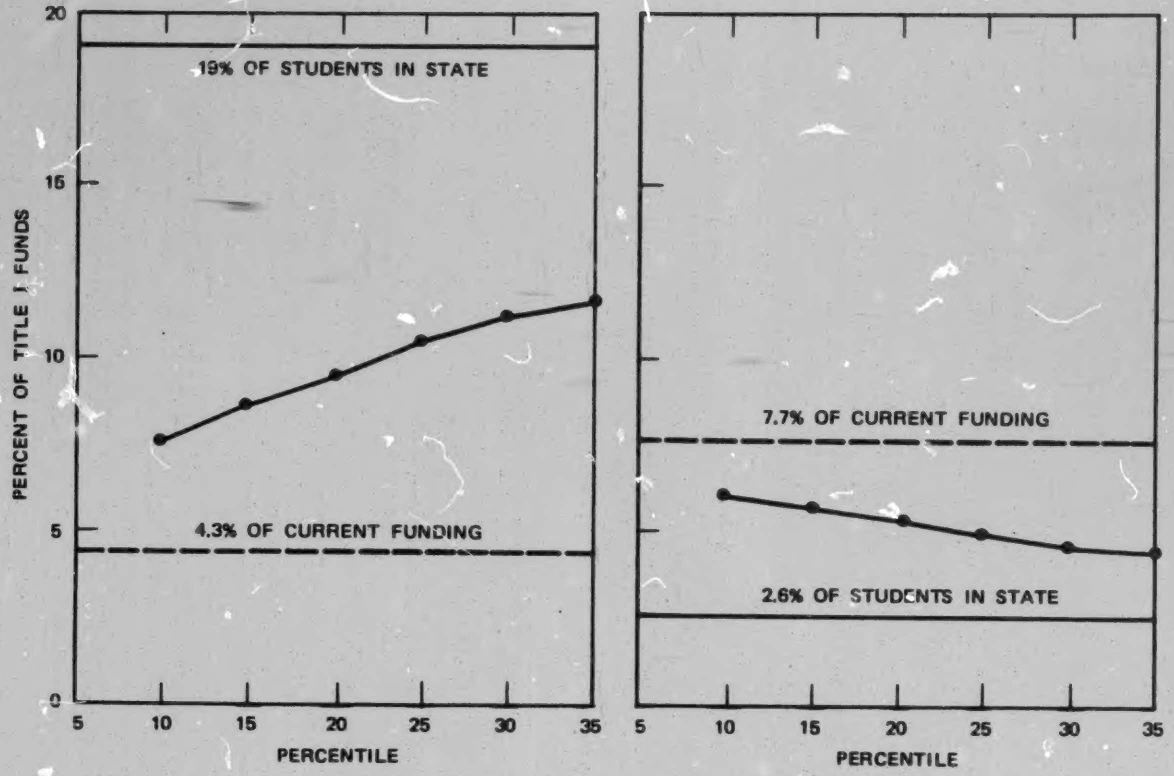
What Table 2 illustrates dramatically is that the larger a district's present Title I population, the larger is the likelihood that it would lose funds under a test score allocation formula. Why is this the case? Because, as we have stated earlier, there is not a perfect relationship between poverty and poor achievement (i.e., low test score performance). Poverty tends to be concentrated in a relatively small number of a state's school districts. Low test performance is much more widely distributed throughout all school districts. This is particularly the case the higher the low achievement cutoff point is established--that is, the closer the definition of low achievement is to the 50th percentile and above, the greater the likelihood that Title I funds will be evenly distributed to all school districts in the state in proportion to their enrollments.

These trends are depicted graphically in Figure 1. As the figure demonstrates, the equalizing effect of test scores increases as the cutoff point shifts from the 10th or 15th percentile upward toward higher levels. In other words, if it is desired to utilize the test score criterion as an equalizing mechanism, the low achievement cutoff point should be set high.

Other States' School Districts

As Appendix D shows, the simulations for the other states--Delaware, Michigan, New Mexico, Iowa, Massachusetts, Alabama, and Hawaii--gave similar results as for California. Specifically, districts with present low levels of Title I eligible students would gain funds under a test score allocation criterion. Conversely, districts with high concentrations of low income children would generally stand to lose Title I funds under a test score criterion. Moreover, as can be seen in Tables 3 and 4, for California and Delaware respectively, it is large school districts that would generally lose funds and small school districts that would gain (although in Iowa, unlike the other states simulated, shifts of funds are such that large districts receive increased funds).

Table 5 illustrates the percent changes in proportion of eligible children within the state, which is closely related to funding changes. Table 6 presents results for the same simulation, arranged by degree of loss: the average size of the district and the total enrollment are indicators of the importance of the category.



(a) POVERTY UNDER 5%
(264 Districts; 845, 290
Students)

(b) POVERTY OVER 35%
(26 Districts; 118,932
Students)

FIGURE 1 CALIFORNIA: TREND TO EQUALIZED FUNDING AMONG HIGH AND LOW POVERTY DISTRICTS AS TEST SCORE PERCENTILE CUTOFF POINT IS RAISED

Table 3

CALIFORNIA: PERCENT CHANGE IN DISTRICT TITLE I FUNDS BETWEEN ALLOCATION BASED ON AFDC AND CENSUS CHILDREN VERSUS 18th PERCENTILE CUTOFF CRITERION

Percent Change	No. of Districts	Total Enrollment	Average Size of District
-100 to -75%	63	10,191	162
-75% to -50%	45	323,788	7,195
-50% to -25%	108	1,448,399	13,411
-25% to 0	113	522,175	4,621
0 to 25%	119	572,527	4,811
25% to 50%	83	322,865	3,890
50% to 75%	65	224,070	3,447
75% to 100%	61	182,476	2,991
100% to 125%	41	83,981	2,048
125% to 150%	19	27,116	1,427
150% to 175%	29	94,055	3,243
175% to 200%	29	75,543	2,605
200% to 225%	19	95,613	3,297
225% to 250%	15	94,558	6,304
250% to 275%	11	34,539	3,140
275% to 300%	13	36,645	2,819
300% to 325%	14	33,881	2,420
325% to 350%	11	25,876	2,352
350% to 375%	7	5,341	763
Over 375%	150	234,460	1,563

Table 4

DELAWARE: PERCENT CHANGE IN FUNDING BETWEEN POVERTY CRITERION
VERSUS 5TH PERCENTILE ON STATE EDUCATIONAL ASSESSMENT TEST

Shift in Funds	No. of Districts	Enrollment	Average Size of District
-100% to -75%	2	6,215	3,108
-75% to -50%	5	15,608	3,122
-50% to -25%	6	38,803	6,467
-25% to 0	3	16,087	5,362
0 to 25%	1	8,046	8,046
25% to 50%	1	5,621	5,621
50% to 75%	1	6,900	6,900
75% to 100%	1	4,172	4,172
100% to 125%	0		
125% to 150%	0		
150% to 175%	1	3,313	3,313
175% to 200%			
200% to 225%			
225% to 250%			
250% to 275%			
275% to 300%			
300% to 325%			
325% to 350%			
350% to 375%			
Over 375%	2	27,515	13,758

Table 5

CALIFORNIA: PERCENT CHANGE IN FUNDING BETWEEN POVERTY AND ACHIEVEMENT CRITERIA

			Proposed Test Score Percentile Cutoffs Defining Low Achievers					
District Poverty Range (1)	Number of School Districts (2)	Total Aggregate Enrollment (3)	10 Pctl. % Change (4)	15 Pctl. % Change (5)	20 Pctl. % Change (6)	25 Pctl. % Change (7)	30 Pctl. % Change (8)	35 Pctl. % Change (9)
1. 0-5 %	264	845,290	+81.72	+103.42	+123.83	+142.55	+161.06	+175.67
2. 5-10%	280	1,183,474	+36.76	+ 42.45	+ 48.76	+ 55.09	+ 60.40	+ 64.48
3. 10-15%	186	648,390	+10.80	+ 13.21	+ 16.13	+ 16.75	+ 17.65	+ 18.45
4. 15-20%	116	386,324	- 1.59	- 3.37	- 3.16	- 4.65	- 5.84	- 7.37
5. 20-25%	78	420,615	-23.90	- 24.37	- 25.73	- 26.66	- 27.62	- 28.24
6. 25-30%	53	738,534	- 9.45	- 14.11	- 18.55	- 22.06	- 25.29	- 27.87
7. 30-35%	12	106,540	-36.34	- 37.15	- 39.75	- 41.44	- 43.64	- 45.11
8. Over 35%	26	118,932	-20.19	- 24.40	- 30.52	- 34.87	- 38.74	- 41.22

Table 6

CALIFORNIA: PERCENT CHANGE IN DISTRICTS BETWEEN ALLOCATION BASED ON AFDC AND CENSUS CHILDREN VERSUS 18th PERCENTILE CUTOFF CRITERION

Percent Change	Number of School Districts	Total Aggregate Enrollment	Average Size of District
-100% to - 75%	105	23,654	225
- 75% to - 50%	66	87,028	1,319
- 50% to - 25%	102	633,955	6,215
- 25% to 0	150	1,459,437	9,730
0 to 25%	105	476,420	4,537
25% to 50%	105	451,807	4,303
50% to 75%	68	371,007	5,456
75% to 100%	47	235,875	5,019
100% to 125%	40	158,576	3,964
125% to 150%	25	127,793	5,112
150% to 175%	22	103,446	4,702
175% to 200%	23	62,790	2,730
200% to 225%	14	59,413	4,244
225% to 250%	12	12,000	1,000
250% to 275%	5	6,834	1,367
275% to 300%	5	15,328	3,066
300% to 325%	5	20,087	4,017
325% to 350%	3	42,211	14,070
350% to 375%	6	10,150	1,692
Over 375%	107	90,288	844

Effects of a "Hold Harmless" Clause

Frequently an effort is made to effect shifts in funding allocations over a period of time. If it is desired to shift the criterion for Title I funding to test scores, and if the number of children deemed to be academically deficient is the same in the state under the new definition as under the current Title I criterion, additional money will be required if some districts are not to lose funds in the changeover. In California this figure is approximately $21 million, or 17.41 percent of FY 1974 Title I funding. Hold harmless figures for other states in our sample are below as the percent added on to present Title I allocations:

Iowa	26.34%
Massachusetts	27.4
New Mexico	16.7
Delaware	17.0
California	17.4

The approximate average hold harmless figure for the states in our sample is 21 percent. These figures are based upon comparisons in the proportions of a state's present Title I children with its projected academically deficient children residing in the same district. The percentages do not take into account shifts in the relative proportions of children from state to state, and therefore must be regarded as rough approximations.

Geographic and Ethnic Analyses

Much of the original intent of ESEA Title I was to enable urban school districts to aid children who suffered from an educational deficit. Consequently, it would appear essential for policymakers to have a keen understanding of the effects of any formula change upon big city school districts. Would they gain or lose Title I funds? How would they fare relative to suburban and rural area school districts, and how would minority children fare? Below we present a series of analyses designed to answer these questions.

Data collected in 1972-73 were used to identify California school districts with respect to their being located in a central city, a suburb, or a rural area. Subsequently, we were able to compare the funding outcomes for these districts under the present Title I formula and an alternative formula based on pupils' test scores. As with all our simulations, we assume the total pool of federal funds to be stable under both formulas (for the particular school year for which the analysis was conducted, the 18th percentile equates with the number of poverty-defined Title I children. Thus, it is the relative distribution of those funds about which we are speaking in the following results.

The bar graph in Figure 2 demonstrates the effect on central city school districts of a test score formula. It is cities with populations in excess of 200,000 that would experience the greatest loss of Title I funds. All other types of school districts, suburban and rural, would gain. For example, the Title I allocation for California's Los Angeles County would decrease 6 percent if the 18th percentile on test scores were used instead of poverty measures. As the tabulation below reveals, the County's two largest city school districts, Los Angeles and Long Beach, would lose to an even greater degree, 16 percent and 32 percent respectively:

	Fiscal Year 1974 Allocation	Based on Allocation N_{18}*	Percent Change
Los Angeles County	$49,768,415	$47,160,550	-6%
Los Angeles City	29,730,000	25,089,147	-16
Long Beach City	2,083,000	1,411,233	-32
Suburban Los Angeles County	17,955,415	20,660,170	+15

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* N_{18} refers to the 18th percentile as the cutoff criterion.

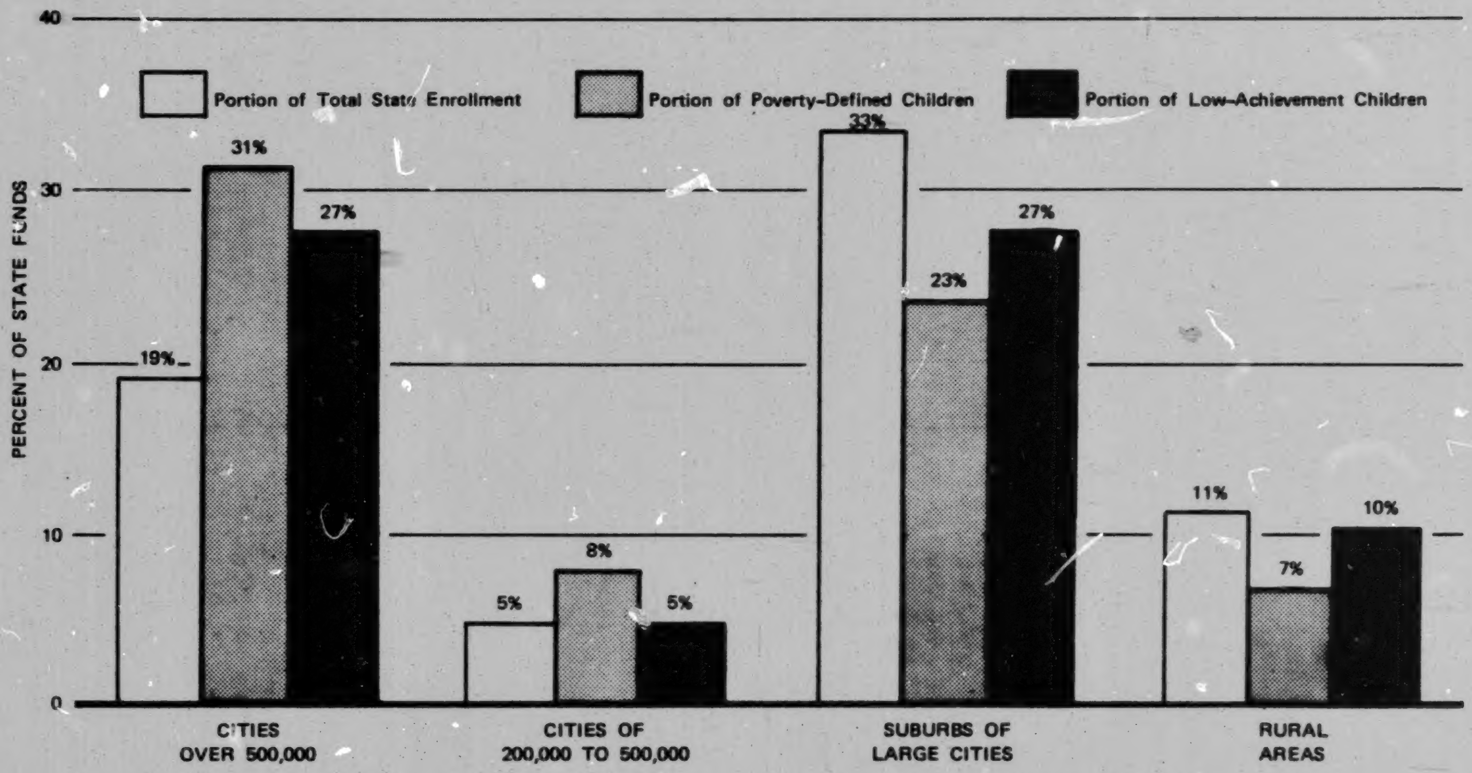


FIGURE 2 CALIFORNIA: COMPARISON OF PRESENT ALLOCATION WITH 15TH PERCENTILE CUTOFF CRITERION IN URBAN/SUBURBAN/RURAL DISTRICTS

The remainder of Los Angeles County, when one subtracts the above mentioned two cities, is primarily suburban, and its school districts would gain, not lose, 15 percent more Title I money under a test score definition of disadvantage.

Table 7 displays such dollar shifts for the whole range of California district categories, and Table 8 shows the projected changes selected for major California cities. As can be seen from the latter table, these nine cities would lose approximately $12 million or 23 percent of their funds, under a shift to a test score allocation criterion. Simply put, large city school districts have students who are relatively more poor economically than they are academically, at least as measured by achievement tests. As with our other analyses, the previous statement is even more accurate as the percentile cutoff definition of low achievement is escalated upward.

Children from Black. Spanish-surname, and other ethnic minority groups who are eligible for Title I are out of proportion to their numbers in the national population. Consequently, we were eager to assess the effects upon such groups of shifting the formula from poverty to low achievement. Such analyses had to extend beyond the urban/suburban/rural assessment because minority group students are not always concentrated in large cities. For example, in California, the major portion of the Spanish-surname population is located in the agricultural valleys and other rural areas. In many Southern states, the Black population is found rather evenly distributed between cities and agricultural areas. Thus, in order to determine the relative distribution effects upon minorities, we chose school districts in both Alabama and California for these analyses.

The results are not as clear as in our other analyses, although for California there definitely would occur a funding shift. The bar graph in Figure 3 demonstrates that when all minority group students are

Table 7

CALIFORNIA: PERCENT CHANGE IN ELIGIBLE STUDENT POPULATION
URBAN, SUBURBAN, AND RURAL DISTRICTS

					Proposed Test Score Percentile Cutoffs Defining Low Achievers					
Category (1)	No. of School Dists. (2)	Total Enrollment (3)	Pct. of State Enroll. (4)	Pct. of Title I Popula. (5)	10 Pctl. % Change (6)	15 Pctl. % Change (7)	20 Pctl. % Change (8)	25 Pctl. % Change (9)	30 Pctl. % Change (10)	35 Pctl. % Change (11)
1. Large Cities Over 500,000 Pop.	3	828,045	19	31	-12	-16	-20	-23	-25	-28
2. Large Cities 200,000 to 500,000 Pop.	4	209,016	5	8	-39	-38	-38	-39	-39	-39
3. Suburbs Of Large Cities	153	1,470,810	33	23	+12	+15	+18	+20	+23	+25
4. Rural Areas Near Large Cities	34	116,109	3	1	+36	+41	+49	+54	+60	+64
5. Medium-Sized Cities 50,000 to 200,000 Pop.	36	647,989	15	15	- 1	- 1	- 1	0	- 1	- 1
6. Suburbs Of Medium-Sized Cities	36	118,018	3	2	+ 9	+ 8	+12	+17	+20	+23
7. Rural Areas Near Medium-Sized Cities	126	121,386	3	2	+25	+25	+29	+29	+29	+28
8. Small Towns or Cities Under 50,000 Pop.	202	706,401	16	12	+21	+22	+24	+25	+26	+27
9. Rural Areas Not Near Large or Medium Cities	421	230,325	5	5	+ 8	+ 9	+13	+13	+15	+16

Table 8

CALIFORNIA: CHANGES IN ALLOCATIONS FOR SELECTED CITIES

City	Fiscal Year 1974 Ratably Reduced Grant	% Change N_{18}	Allocation Based on N_{18}	Loss
Oakland	$ 3,952,000	-42	$ 2,292,160	$ 1,659,840
Fresno	2,035,000	-42	1,180,300	854,700
Long Beach	2,083,000	-32	1,416,440	666,560
Sacramento	1,979,000	-48	1,029,080	949,920
San Bernardino	1,541,000	-21	1,217,390	323,610
San Diego	3,245,000	-15	2,758,250	486,750
San Francisco	4,259,000	-39	2,597,990	1,661,010
Stockton	1,586,000	-20	1,268,800	317,200
Los Angeles	29,730,000	-16	24,973,200	4,756,800
Total	$50,410,000		$38,733,610	$11,676,390
Loss, overall	23%			

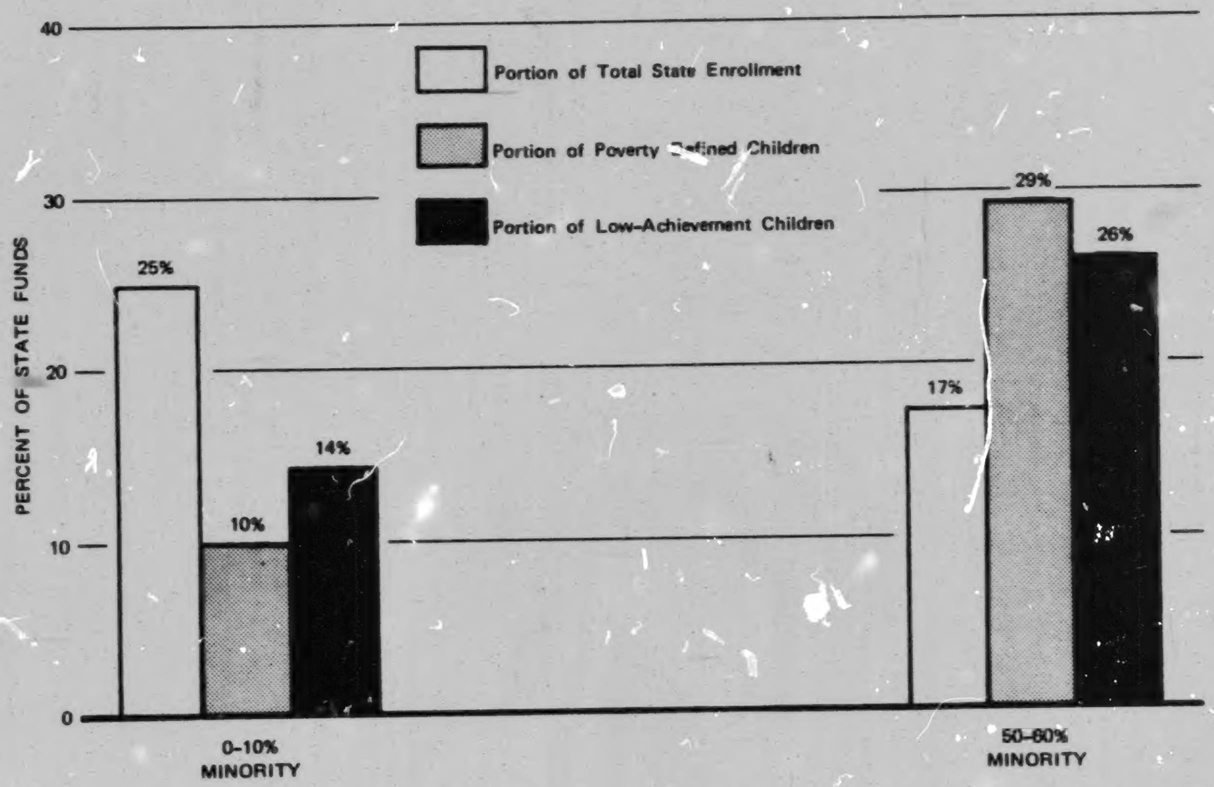


FIGURE 3 CALIFORNIA: COMPARISON OF PRESENT ALLOCATION WITH 15TH PERCENTILE TEST SCORE CUTOFF CRITERION, BASED ON PERCENTAGE OF MINORITY CHILDREN RESIDING IN DISTRICT

aggregated and compared with white students, the test score allocation criterion would provide school districts with low percentages (from none to 10 percent of minority group children with 4 percent more of that state's total Title I appropriation than is now the case. Conversely, as one would expect, school districts with a high proportion of their student body from minority groups (50 to 60 percent) would lose about the same amount of funds under a test score formula. Table 9 shows the detail of this finding.

When the ethnic minority makeup of school districts is divided more finely, we see that those districts that have more than 10 percent of their students who are Black would lose funds (Table 10). However, the findings on districts with varying proportions of their student body comprised of Spanish-surname students are more complicated (Table 11). For example, districts with less than 10 percent of their enrollment Spanish-surname would gain under a test score allocation criterion. The findings are similar for districts with a very high proportion (more than 80 percent) of their students Spanish-surname. However, the findings are very uneven in between, some categories of districts gaining and some losing funds. This is probably a consequence of the fact that, in California, Spanish-surname students are more evenly distributed than Black students between cities, suburbs, and rural areas.

Similar analyses for Alabama are also complicated. As displayed in Table 12, those districts in Alabama which are relatively devoid of Black students (less than 20 percent Black) or who are relatively devoid of White students (more than 50 percent Black) lose funds under a test score criterion. However, districts whose student bodies are relatively integrated between Black and White students would gain Title I funds. We are not sufficiently familiar with Alabama to offer an explanation of this mixed condition. However, we view it as far too complicated ever to be used as an argument that integration lowers test scores.

Table 9

CALIFORNIA: FUNDING SHIFTS BASED ON PERCENTAGE OF MINORITY STUDENTS RESIDING IN EACH DISTRICT*

					Percentage Changes in Funding					
Percent of District Enrollment Which Is Minority (1)	Number of Districts (2)	Total Enrollment (3)	Percent of State Enrollment (4)	Percent of Title I Children (5)	10 Pctl. % Change (6)	15 Pctl. % Change (7)	20 Pctl. % Change (8)	25 Pctl. % Change (9)	30 Pctl. % Change (10)	35 Pctl. % Change (11)
0 - 10	405	969,739	22	8	+37.66	+47.86	+58.49	+66.85	+76.99	+84.41
10+ - 20	219	987,589	22	13	+ 6.47	+12.29	+19.14	+25.58	+31.06	+34.76
20+ - 30	127	739,233	17	13	+15.30	+18.08	+21.48	+23.16	+24.28	+25.35
30+ - 40	97	505,838	11	14	-11.24	-10.99	-11.78	-12.32	-12.79	-13.00
40+ - 50	57	231,400	5	8	+ 3.17	- 0.89	- 3.54	- 5.66	- 8.18	- 9.69
50+ - 60	43	708,708	6	28	- 7.06	-11.65	-16.17	-19.74	-22.78	-25.73
60+ - 70	33	179,339	4	8	-19.78	-20.57	-23.05	-25.46	-28.26	-29.73
70+ - 80	14	71,146	2	4	-37.19	-35.80	-38.10	-39.81	-42.00	-43.16
80+ - 90	13	10,942	0	1	-31.56	-34.31	-36.28	-40.00	-42.77	-45.33
90+ -100	7	44,165	1	[illegible]	+18.06	+ 4.63	- 7.41	-15.72	-23.14	-28.16

*Sums may not total 100 percent in all columns due to rounding.

Table 10

CALIFORNIA: FUNDING SHIFTS BASED ON PERCENTAGE
OF BLACK STUDENTS RESIDING IN EACH DISTRICT*

Percent of District Enrollment Which Is Black (1)	Number of Districts (2)	Total Enrollment (3)	Percent of State Enrollment (4)	Percent of Title I Children (5)	Percentage Changes in Funding 10 Pctl. % Change (6)	15 Pctl. % Change (7)	20 Pctl. % Change (8)	25 Pctl. % Change (9)	30 Pctl. % Change (10)	35 Pctl. % Change (11)
0 - 10	956	3,117,623	70	48	+15.89	+19.26	+23.39	+26.29	+29.03	+31.05
10+ - 20	33	373,204	8	10	-19.51	-18.49	-18.20	-18.23	-18.30	-17.90
20+ - 30	12	796,852	18	33	-12.27	-16.14	-20.63	-23.80	-26.81	-29.25
30+ - 40	4	40,318	1	2	-10.50	-19.33	-24.05	-27.22	-29.48	-30.73
40+ - 50	1	14,715	0	0	-42.99	-45.34	-46.49	-45.64	-46.96	-47.92
50+ - 60	3	1,144	0	0	-42.64	-42.67	-47.65	-51.21	-52.02	-53.65
60+ - 70	2	60,134	1	4	-42.13	-40.19	-42.78	-44.38	-45.92	-47.12
70+ - 80	2	2,179	0	0	-26.69	-32.33	-38.70	-42.48	-47.47	-52.15
80+ - 90	2	41,930	1	3	+10.55	- 1.39	-13.14	-21.11	-28.19	-32.67
Over 90	0									

*Sums may not total 100 percent in all columns due to rounding.

Table 11

CALIFORNIA: FUNDING SHIFTS BASED ON PERCENTAGE OF SPANISH-SURNAME STUDENTS RESIDING IN EACH DISTRICT*

					Percentage Changes in Funding					
Percent of District Enrollment Which Is Spanish-Surnamed (1)	Number of Districts (2)	Total Enrollment (3)	Percent of State Enrollment (4)	Percent of Title I Children (5)	10 Pctl. % Change (6)	15 Pctl. % Change (7)	20 Pctl. % Change (8)	25 Pctl. % Change (9)	30 Pctl. % Change (10)	35 Pctl. % Change (11)
0 - 10	562	1,678,270	38	22	+ 4.19	+10.57	+16.08	+21.02	+26.11	+29.88
10+ - 20	175	1,254,184	28	28	- 3.52	- 3.63	- 3.26	- 2.36	- 1.86	- 1.14
20+ - 30	104	1,098,518	25	37	- 2.50	- 5.91	- 9.18	-11.98	-14.52	-16.68
30+ - 40	65	213,242	5	6	+13.82	+14.67	+14.11	+12.26	+10.54	+ 9.11
40+ - 50	37	79,340	2	3	- 0.22	- 3.98	- 5.38	- 7.69	-10.29	-13.09
50+ - 60	39	81,218	2	3	+ 3.42	+ 2.56	+ 0.21	- 3.48	- 7.39	- 9.49
60+ - 70	15	27,158	1	1	- 4.61	- 2.46	+ 3.28	+ 2.06	+ 0.32	+ 0.99
70+ - 80	8	7,759	0	0	+20.65	+14.51	+14.85	+10.77	+ 3.53	+ 1.09
80+ - 90	10	8,410	0	0	+35.80	+21.22	+14.68	+ 8.80	+ 4.29	- 2.38
Over 90	0									

*Sums may not total 100 percent in all columns due to rounding.

Table 12

ALABAMA: FUNDING SHIFTS BASED ON PERCENTAGE OF BLACK STUDENTS RESIDING IN EACH DISTRICT*

					Percentage Changes in Funding					
Percent of District Enrollment Which Is Black (1)	Number of Districts (2)	Total Enrollment (3)	Percent of State Enrollment (4)	Percent of Title I Children (5)	10 Pctl. % Change (6)	15 Pctl. % Change (7)	20 Pctl. % Change (8)	25 Pctl. % Change (9)	30 Pctl. % Change (10)	35 Pctl. % Change (11)
0 - 10	28	136,465	17	11	-16	- 9	- 6	- 1	+ 5	+10
10+ - 20	21	114,719	14	10	-20	-13	- 9	- 4	- 4	+ 1
20+ - 30	21	163,510	20	15	+20	+25	+27	+30	+31	+32
30+ - 40	14	61,823	8	7	+ 8	+10	+11	+10	+ 9	+10
40+ - 50	13	162,112	20	22	+28	+22	+19	+15	+13	+10
50+ - 60	9	89,675	11	14	-10	-10	-10	- 9	- 8	- 8
60+ - 70	6	29,301	4	6	- 9	-14	-16	-17	-18	-18
70+ - 80	6	21,507	3	6	-34	-37	-39	-41	-42	-43
80+ - 90	2	6,888	1	2	-29	-29	-29	-33	-35	-37
90+ -100	5	19,032	2	7	-17	-25	-29	-34	-37	-41

*Sums may not total 100 percent in all columns due to rounding.

Interstate Analyses

In this set of analyses our intent was to determine the degree to which ESEA Title I funds would be redistributed among states should pupil test scores, rather than family income, be used as an allocation criterion. These simulations are based upon data obtained from 13 states. The states involved and the important information regarding their testing programs are listed in Table 13.

Table 13

STATES AND TESTS USED IN INTERSTATE ANALYSES

State	Test, Level, Form	Grade	Testing Season
Alabama	SRA Achievement, Level 3, Form A	4	Spring
Arizona	Metropolitan, Primary II-H	3	Fall
Arkansas	SRA Achievement, Form F	6	Spring
California	CTBS, Level 2, Form Q	6	Fall
Hawaii	STEP, 1957 ed., Form 4-A	4	Fall
Iowa	ITBS, II, Form 5 or 6	5	Fall, winter
Mississippi	CAT, Level 3, Form A	5	Spring
New Hampshire	SAT, II, Form X	6	Fall
New Mexico	CTBS, Level 2, Form R	5	October
North Carolina	ITBS, II, Form 5	6	Spring
North Dakota	ITBS, II, Form 5	5	Fall
Rhode Island	ITBS, II, Form 5	4	Fall
Tennessee	Metropolitan, Form F	5	Fall

It is impossible to determine interstate distribution patterns precisely without having the entire 50-state universe under observation. However, the 13 states in our sample are distributed among the six regions--East, Northeast, South, Midwest, Southwest, and West--and, consequently, we are hopeful that our simulations provide a reasonably accurate national prediction.

Our interstate analyses would have been impossible without the availability of data from the "Anchor Test Study" (ATS) conducted in 1972 by the Educational Testing Service. Results from this study enabled us to interpolate between scores of the various tests used by the 13 states in their statewide testing programs. The Anchor Test provided the linkage between publishers' norming tables and raw score distributions. (A more exhaustive description of the Anchor Test Study and its utility for our analytic purposes is provided in Appendix C.)

The following tables summarize the results of the interstate analyses. Column 1 of Table 14 lists the 13 states involved in our simulations, Column 2 displays the state's total enrollment, Column 3 contains the number of Title I eligible students who reside within the boundaries of the state under consideration, and Columns 4 through 9 display the number of the Title I eligible children who would be found within the state's boundaries should varying test score percentile cut off points be used as the allocation criterion.

Table 15 displays the percentage change in funding when different test score cutoff points are employed as Title I criteria. These percentages reveal the degree to which a state would gain or lose eligible students and thus gain or lose Title I funds.

Subsequent tables simply explain the above findings in greater detail. Table 16 shows the percent changes in the states' proportions of the national Title I. Table 17 displays the percent of students in a state scoring below specified Anchor Test Survey cutoff percentiles, and thus explains why the number of eligible students in a state would vary from one percentile level to another.

Table 14

INTERSTATE COMPARISON: NUMBER OF ELIGIBLE STUDENTS UNDER AFDC VERSUS ANCHOR TEST SCORE CRITERIA

State (1)	Enrollment* (2)	AFDC Children (3)	10 Pctl. Children (4)	15 Pctl. Children (5)	20 Pctl. Children (6)	25 Pctl. Children (7)	30 Pctl. Children (8)	35 Pctl. Children (9)
Alabama	733,296	105,370	174,524	245,067	279,899	313,484	344,722	375,374
Arizona	467,421	50,292	25,708	46,415	67,636	78,667	98,252	110,124
Arkansas	413,418	54,245	84,256	121,214	160,665	208,403	257,460	292,658
California	4,407,000	752,195	484,770	793,260	969,540	1,145,820	1,366,170	1,586,520
Hawaii	181,587	23,289	15,737	23,606	29,054	36,317	45,397	50,844
Iowa	617,185	52,711	10,307	24,687	32,896	57,583	74,062	94,738
Mississippi	491,800	100,232	155,212	201,146	254,359	293,851	320,654	347,899
New Hampshire	155,300	14,047	11,663	15,452	21,074	29,352	36,030	40,704
New Mexico	278,525	40,748	36,381	64,443	78,176	92,213	110,925	126,438
North Carolina	1,270,595	129,658	165,177	254,119	317,649	393,884	495,532	540,003
North Dakota	136,518	13,566	5,979	12,928	17,065	10,290	27,440	34,757
Rhode Island	180,000	28,028	32,256	46,080	46,296	46,836	47,700	63,432
Tennessee	6[illegible]00	85,254	84,500	143,650	185,900	261,950	329,550	380,250
Total, U.S.	42,277,382	6,247,105	4,227,738	6,341,607	8,455,476	10,559,346	12,683,215	14,797,084

*From NEA, Estimates of School Statistics, 1972-1973.

Table 15

INTERSTATE COMPARISON: PERCENT CHANGE IN ELIGIBLE CHILDREN
UNDER DIFFERENT ANCHOR TEST SCORE CRITERIA

		Percent Change in Proportion of National Eligible Children When Criterion on Test Is:					
State (1)	Enrollment (2)	10 Pctl. % Change (3)	15 Pctl. % Change (4)	20 Pctl. % Change (5)	25 Pctl. % Change (6)	30 Pctl. % Change (7)	35 Pctl. % Change (8)
Alabama	733,296	+145.23	+129.76	+ 97.02	+ 76.19	+ 61.30	+ 50.59
Arizona	467,421	- 25.00	- 8.75	- 1.25	- 7.50	- 3.75	- 7.50
Arkansas	413,418	+141.25	+122.09	+120.93	+129.06	+134.88	+129.06
California	4,407,000	- 4.81	+ 3.82	- 4.81	- 9.96	- 10.54	- 10.96
Hawaii	181,587	0	0	- 8.11	- 8.11	- 3.70	- 8.11
Iowa	617,185	- 71.43	- 53.57	- 53.57	- 35.71	- 30.95	- 23.81
Mississippi	491,800	+129.37	+ 98.1[illegible]	+ 87.50	+ 73.75	+ 57.50	+ 46.87
New Hampshire	155,300	+ 27.27	+ 9.09	+ 13.64	+ 27.27	+ 27.27	+ 27.27
New Mexico	278,525	+ 32.31	+ 56.92	+ 41.54	+ 33.85	+ 33.85	+ 30.77
North Carolina	1,270,595	+ 87.98	+ 92.30	+ 80.76	+ 78.84	+ 87.98	+ 75.00
North Dakota	136,518	- 9.52	- 4.76	- 9.52	- 4.76	+ 9.52	+ 19.04
Rhode Island	180,000	+ 68.89	+ 62.22	+ 22.22	- 2.22	- 15.56	- 4.44
Tennessee	845,000	+ 46.32	+ 66.17	+ 61.02	+ 81.61	+ 90.44	+ 88.23

Table 16

INTERSTATE COMPARISON: CHANGE IN ELIGIBLE CHILDREN UNDER TEST SCORE CRITERIA AS PERCENT OF NATIONAL TITLE I TOTAL

State (1)	Title I Children* As % of State ADA (2)	State Title I As % of National Title I** (3)	10 Pctl*** Nat. Pct. (4)	15 Pctl. Nat. Pct. (5)	20 Pctl. Nat. Pct. (6)	25 Pctl. Nat. Pct. (7)	30 Pctl. Nat. Pct. (8)	35 Pctl. Nat. Pct. (9)	Pct. of U.S. Total Enroll. (10)
Alabama	14.36	1.68	4.12	3.86	3.31	2.96	2.71	2.53	1.73
Arizona	10.75	.80	.60	.75	.79	.74	.77	.74	1.10
Arkansas	7.39	.86	1.99	1.91	1.90	1.97	2.02	1.97	1.73
California	17.06	12.04	11.46	12.50	11.46	10.84	10.77	10.72	10.42
Hawaii	12.82	.37	.37	.37	.34	.34	.36	.34	.43
Iowa	8.54	.84	.24	.39	.39	.54	.58	.64	1.45
Mississippi	20.38	1.60	3.67	3.17	3.00	2.78	2.52	2.35	1.16
New Hampshire	9.04	.22	.28	.24	.25	.28	.28	.28	.37
New Mexico	14.63	.65	.86	1.02	.92	.87	.87	.85	.66
North Carolina	10.20	2.08	3.91	4.00	3.76	3.72	3.91	3.64	3.00
North Dakota	9.93	.21	.14	.20	.20	.18	.22	.23	.32
Rhode Island	15.57	.45	.76	.73	.55	.44	.38	.43	.42
Tennessee	10.08	1.36	1.99	2.26	2.19	2.47	2.59	2.56	1.99

*Percent of children living in state who qualify as Title I formula children.

**Percent of U.S. Title I formula children living in state.

***Percent of U.S. children reading at bottom 10 percent who reside in state.

Table 17

INTERSTATE COMPARISON: PERCENT OF CHILDREN SCORING BELOW ANCHOR TEST CUTOFF POINTS

	Anchor Test Score Percentile Cutoffs Defining Low Achievers					
State (1)	10 Pctl. (2)	15 Pctl. (3)	20 Pctl. (4)	25 Pctl. (5)	30 Pctl. (6)	35 Pctl. (7)
Alabama	23.80	33.42	38.17	42.75	47.01	51.19
Arizona*	5.50	9.93	14.47	16.83	21.02	23.56
Arkansas	11.49	16.53	21.41	28.42	35.11	39.91
California	11.00	18.00	22.00	26.00	31.00	36.00
Hawaii	8.70	13.00	16.00	20.00	25.00	28.00
Iowa	1.67	4.00	5.33	9.33	12.00	15.35
Mississippi**	31.56	40.90	51.72	59.75	65.20	70.74
New Hampshire***	7.52	9.95	13.58	18.90	23.20	26.21
New Mexico	13.06	23.14	28.07	33.11	39.83	45.40
North Carolina	13.00	20.00	25.00	31.00	39.00	42.50
North Dakota	4.39	9.48	12.50	14.14	20.10	25.46
Rhode Island	17.92	25.60	25.72	26.02	26.50	35.24
Tennessee	10.00	17.00	22.00	31.00	39.00	45.00

*Metropolitan Percentiles (more accurate, we think, than Anchor in this case).

**Only 85 percent of districts in Mississippi participated.

***Tests administered to only 46 percent of New Hampshire children.

Based on our analysis of 13 states, there appears to be a slight tendency for Southern and New England states to benefit from a test score allocation criterion. With a low percentile cutoff, Arkansas, Mississippi, Tennessee, and New Mexico (to the degree to which it can be taken as a southern state) benefit. Similarly, Rhode Island and New Hampshire would profit. As the test score cutoff point moves to higher percentile levels, only Southern states consistently continue to benefit.

Arizona, California, Iowa, and North Dakota are rather consistent "losers" regardless of where the cutoff point is drawn. This means that, on balance, these are states more plagued by poverty than by poor achievement. Hawaii remains relatively stable, and would neither win nor lose substantially should a new formula be put into effect.

Why should these shifts of funds between states come about? What is it about an achievement test score criterion that would enable Southern and New England states to profit more than under the present poverty formula? The likely answer is not to be found so much in any abnormally low performance of Yankee and Confederate students. Rather, it is more likely a consequence of the imprecision of the poverty measures in these regions. In ways we will explain later in this report, the present Title I low income formula probably understates the poverty conditions of school districts in these two parts of the nation, at least partially because of the lack of uniformity with which states allocate AFDC payments. The shift of funds to Southern states under a test score formula are simply compensating for what an accurate poverty measure would otherwise do. If the Title I formula were changed so as to measure poverty more precisely, it is not likely that there would be an interstate funding redistribution of any sizable magnitude.

Partial Summary

The discussion and subject matter throughout this paper has a tendency to become complicated. Consequently, at selected intervals we provide summaries of the findings to that point. Here our concern is with the major results from our simulations of the distribution patterns of the present ESEA Title I poverty formula compared with a test score allocation criterion. Within a state:

- Use of pupil test scores for ESEA Title I allocation purposes would place Title I funds in a different, though overlapping, set of school districts than is the case under the present income based formula.
- This is so because the incidence of low achieving children is more uniformly distributed across school districts than is the incidence of children from low income families.
- A test score allocation criterion would decrease the proportion of Title I funds flowing to large city school districts unless a concentration criterion or a hold harmless clause were incorporated.
- In general, it appears that a hold harmless provision would cost at least 20 percent above what currently is being appropriated under the Title I poverty formula.
- Districts with large numbers of Black students, at least in California, would lose Title I funds under a test score criterion. The picture is substantially more mixed for Spanish-surname children.
- Southern school districts with roughly equal numbers of Black and White students would tend to benefit financially from a test score allocation criterion. Conversely, racially segregated districts would suffer under such a criterion.

Between the states analyzed:

- Using present ESEA Title I formula components for a comparison, a test score distribution criterion would benefit Southern and New England states; they would profit from a shift of funds from the Western states.

- The reason for such a shift is not that Southern students are disproportionately low scoring, but that present poverty measures are imprecise when applied to states in these regions, understating the extent of deprivation.

III PRESENT VERSUS ALTERNATIVE POVERTY CRITERIA

Debate regarding the comparative validity and utility of test scores and poverty measures is not limited to present Title I formula components. Indeed, Congress itself always was unhappy with the original $2,000 definition of a low income family. The statutory definition was altered to $3,000 in 1970, but a proviso was attached that the higher figure was not to be used until appropriations were sufficient for full funding under the $2,000 definition. Subsequently, suggestions were made repeatedly that even the $3,000 figure was too limiting, given growing inflation rates. Recommendations for poverty criteria all the way to the $6,000 level have been seriously made.

Another component of the present ESEA Title I formula has been subjected to heavy criticism--this is the use of AFDC children as a measure of poverty entitlement. Appendix A explains the controversy in detail. Suffice it to say here that AFDC critics assert that it is a far from uniform measure. Welfare eligibility regulations and administrative policies vary sufficiently among and within states to skew Title I allotments systematically.

Income levels, regardless of the precise dollar figures involved, and AFDC payments have themselves come in for criticism, primarily on grounds that they are overly simple and subject to regional and other circumstantial disparities. As a consequence of such criticisms, it was decided in 1974 that the ESEA would embody a more complicated poverty measure, the so-called "Orshansky index." In this section we present the results of our comparative analyses of the present Title I formula with alternative poverty measures, including Orshansky. However, before turning directly to this task, we digress briefly to explain the Orshansky formula (a more extensive description is provided in Appendix B).

Orshansky Poverty Index

In response to concern regarding the inadequacy of earlier poverty measures, the Social Security Administration, through the efforts of Mollie Orshansky of the Division of Research and Statistics, proposed a new measure of poverty in 1965. Since the most serious flaw in the previous standard had been its failure to recognize family size, Ms. Orshansky attempted to take this additional variable into account.

In establishing a new poverty index, Ms. Orshansky derived a standard based on the level of income remaining _after_ basic food needs were met. The foundation for determining the dietary needs of a family was the "economy food plan" of the U.S. Department of Agriculture, which is a nutritionally adequate food plan designed for "emergency or temporary use when funds are low." Families with two members were defined as poor if food costs as a percent of total income was less than 28 percent, for families of three or more, the ratio was 33 percent. Farm families were assumed to need only 70 percent as much cash income as non-farm families.

Two revisions were made to the Orshansky poverty index in 1969. Henceforth, annual adjustments in levels would be based on changes in the Consumer Price Index, rather than merely on changes in the cost of food included in the economy food plan. A second change raised the farm income threshhold from 70 to 85 percent of the corresponding non-farm level.

Dissatisfaction has been directed at the Orshansky index from both sides. For example, the President's Commission on Income Maintenance Programs charged that adequate nutritional standards cannot be met under the economy food plan for any period of time, and that the food-to-income ratio does not provide sufficient money for necessities. On the other hand, a recent GAO study contends that the Orshansky index exaggerates the incidence of poverty by not including non-cash benefits in defining income. The GAO maintains further that the index's reliability is reduced by its failure to differentiate cost-of-living levels between metropolitan areas and small towns.

Despite such criticisms, the Orshansky index generally is viewed as a more valid measure of poverty than is a simple measure of annual income.

Selecting from Alternative Poverty Criteria

The many weaknesses of the present system of measuring poverty for ESEA purposes prompted a search for a better allocation yardstick. Below we present the results of two types of simulation analyses--changes among school districts within states and changes among states themselves--using five poverty criteria: the "Orshansky" index and family annual income levels of $3,000, $4,000, $5,000, and $6,000.

Intrastate Changes

District by district shifts within the states of California, Massachusetts, and Alabama are presented in Tables 18, 19, and 20. For Massachusetts and California the picture is distinct, provided the level of funding remained constant: districts that currently received a relatively low level of Title I funds would gain, and districts that are funded at a relatively high level would lose money under shifts to alternative poverty criteria. Indeed, in the case of Massachusetts, many smaller districts would benefit at the expense of Boston.

In Alabama, the redistributions are not as evident as in the above two industrial states. As shown in Table 20, changes do not follow any

Table 18

CALIFORNIA: CHANGES IN PROPORTIONS OF ELIGIBLE CHILDREN UNDER PRESENT TITLE I FORMULA VERSUS OTHER POVERTY CRITERIA

Present Percent of Title I Students in District (1)	Number of Districts (2)	Total Enrollment (3)	Percent of State's Title I Children (4)	Percent Change in Proportion of State's Children Who Are Poor by Definition of:				
				Orshansky (5)	$3000 (6)	$4000 (7)	$5000 (8)	$6000 (9)
0 - 5	264	845,290	4.3	113	152	135	130	136
5+ - 10	280	1,183,474	14.5	40	52	46	48	52
10+ - 15	186	648,390	12.2	43	43	41	42	45
15+ - 20	116	386,324	10.8	17	9	11	15	15
20+ - 25	78	420,615	14.9	5	- 4	2	3	2
25+ - 30	53	738,534	30.3	- 56	- 59	- 57	- 58	- 60
30+ - 35	12	106,540	5.4	- 8	- 5	- 5	- 9	- 13
35+ - 40	10	70,587	4.2	- 3	- 5	- 4	- 8	- 13
40+ - 45	9	8,562	.1	- 27	- 31	- 30	- 27	- 31
Over 45	7	39,783	3.0	- 32	- 42	- 37	- 40	- 42
Total	1,015	4,448,099						

Table 19

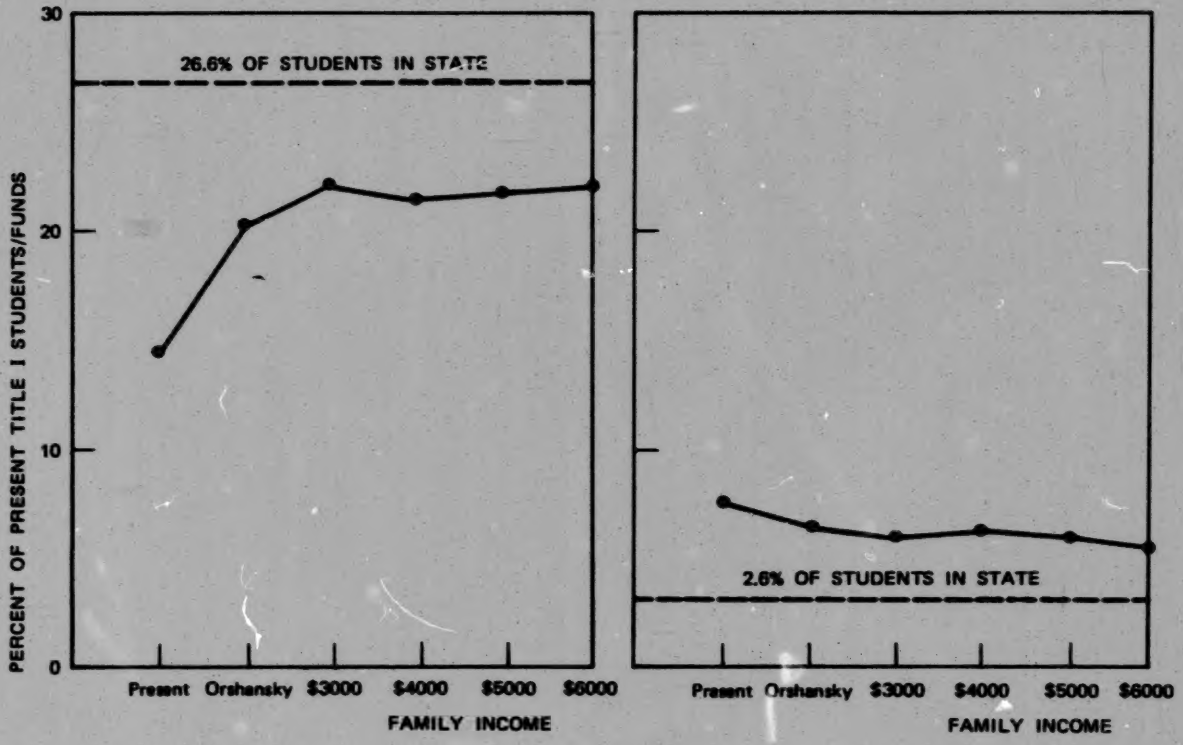
MASSACHUSETTS: CHANGES IN PROPORTIONS OF ELIGIBLE CHILDREN UNDER PRESENT TITLE I FORMULA VERSUS OTHER POVERTY CRITERIA

Present Percent of Title I Students in District (1)	Number of Districts (2)	Total Enrollment (3)	Percent of State's Title I Children (4)	Percent Change in Proportion of State's Children Who Are Poor by Definition of:				
				Orshansky (5)	$3000 (6)	$4000 (7)	$5000 (8)	$6000 (9)
0 - 5	121	320,245	6.4	91	110	97	97	98
5+ - 10	111	342,516	14.5	45	61	52	50	51
10+ - 15	49	176,048	12.5	32	30	31	33	38
15+ - 20	25	89,521	9.4	20	24	25	23	25
20+ - 25	2	31,058	3.7	17	11	12	14	16
25+ - 30	7	111,003	18.9	11	- 5	4	7	5
30+ - 35	4	32,074	6.1	20	22	25	19	16
35+ - 40	0							
40+ - 45	0							
Over 45	1	96,808	28.5	-78	- 80	-79	-80	-81
Total	320	1,199,273						

Table 20

ALABAMA: CHANGES IN PROPORTIONS OF ELIGIBLE CHILDREN UNDER PRESENT TITLE I FORMULA VERSUS OTHER POVERTY CRITERIA

Present Percent of Title I Students in District (1)	Number of Districts (2)	Total Enrollment (3)	Percent of State's Title I Children (4)	Percent Change in Proportion of State's Children Who Are Poor by Definition of:				
				Orshansky (5)	$3000 (6)	$4000 (7)	$5000 (8)	$6000 (9)
0 - 5	7	18,746	.6	-11	-23	- 9	- 2	0
5+ - 10	48	316,320	23.7	13	5	11	17	25
10+ - 15	36	224,683	26.6	7	4	5	6	9
15+ - 20	14	162,735	25.5	- 8	- 5	- 8	- 9	-11
20+ - 25	7	33,280	7.4	1	2	0	- 1	- 7
25+ - 30	5	18,683	4.8	- 4	1	- 1	- 9	-18
30+ - 35	2	11,253	3.7	-23	- 8	-15	-25	-33
35+ - 40	2	6,885	2.5	-15	0	- 7	-17	-27
40+ - 45	3	9,556	3.8	-30	-18	-25	-32	-39
Over 45	1	2,891	1.3	-32	- 8	-25	-35	-44
Total	125	805,032						



(a) POVERTY 5-10%
(280 Districts; 1,183,474
Students)

(b) POVERTY OVER 35%
(28 Districts; 118,932
Students)

FIGURE 4 CALIFORNIA: TREND TO EQUALIZED FUNDING UNDER ALTERNATIVE POVERTY CRITERIA

discernable pattern. Furthermore, they are smaller in the dollar amounts involved than the changes in either Massachusetts or California.

Generally, the shift from the present system to any of the alternative poverty criteria under consideration would have an equalizing effect similar to the effect of shifting to test scores: compare Figure 4 to Figure 1. The higher the poverty level, the more nearly the proportion of target children is equal throughout a state's districts.

Interstate Changes

What would happen to total state allocations if other poverty criteria were chosen? An analysis was performed to assess variations in proportions of poor children under different poverty criteria. Detailed state-by-state results are displayed in Appendix D; a regional summary is presented in Table 21; the results for each region are shown in Tables 22 through 29. It must be remembered that these figures represent changes in the number of children, rather than in actual dollar amounts. However, dollar allocations are obviously affected since they are related to the size of a state's target population.

As shown in the regional summary (Table 21), substantial gains would accrue to the Southeast and Southwest regions (83 and 71 percent respectively) under the Orshansky poverty index while large losses would occur in the New England, Pacific, Great Lakes, and Mideast regions. The six states sustaining the largest decrease under the Orshansky index are Michigan (43 percent), Illinois (42 percent), New Jersey (49 percent), New York (48 percent), Massachusetts, (46 percent) and Connecticut (42 percent). Notice that these are all industrialized states.

These shifts are intimately related to the variation in the quality and scope of state AFDC programs. States that at present have poorly funded welfare programs also have relatively low Title I funding. The

Table 21

REGIONAL SUMMARY: CHANGES IN PROPORTIONS OF ELIGIBLE CHILDREN UNDER ALTERNATIVE POVERTY CRITERIA

Region (1)	FY 1974 Percent of Present Title I Children (2)	Percent of Orshansky Children '70 Census (3)	Pct. Change in Proportion of National Children (4)	Percent of $3000 Children '70 Census (5)	Pct. Change in Proportion of National Children (6)	Percent of $4000 Children '70 Census (7)	Pct. Change in Proportion of National Children (8)
Southeast	20.5	37.5	+83	37.8	+84	37.2	+81
Plains	5.6	6.7	+20	6.5	+16	6.8	+21
New England	5.3	3.4	-36	3.3	-38	3.4	-36
Pacific	14.9	10.0	-33	10.2	-32	10.3	-31
Southwest	7.0	12.0	+71	11.3	+61	11.5	+64
Great Lakes	19.0	13.3	-30	13.7	-28	13.5	-29
Mideast	25.7	15.0	-41	15.1	-41	15.2	-41
Rocky Mountain	2.0	2.1	+ 5	2.1	+ 5	2.1	+ 5

Table 22

SOUTHEAST REGION: CHANGES IN PROPORTIONS OF ELIGIBLE CHILDREN UNDER ALTERNATIVE POVERTY CRITERIA

State (1)	Percent of National Title I Children (2)	Percent of National Orshansky Children (3)	Percent Change from Present (4)	Percent of National $3000 Children (5)	Percent Change from Present (6)	Percent of National $4000 Children (7)	Percent Change from Present (8)	Percent of National $5000 Children (9)	Percent Change from Present (10)
Alabama	1.7	3.5	+106	3.6	+112	3.5	+106	3.4	+100
Arkansas	.9	2.0	+122	2.0	+122	2.0	+122	2.0	+122
Florida	2.3	3.9	+ 70	3.9	+ 70	3.9	+ 70	4.0	+ 74
Georgia	2.3	3.8	+ 65	3.7	+ 61	3.7	+ 61	3.7	+ 61
Kentucky	1.7	2.7	+ 59	2.9	+ 71	2.8	+ 65	2.7	+ 59
Louisiana	2.3	4.0	+ 74	4.2	+ 83	4.0	+ 74	3.7	+ 61
Mississippi	1.6	3.4	+113	3.6	+125	3.4	+113	3.2	+100
North Carolina	2.1	4.1	+ 95	4.0	+ 90	4.0	+ 90	4.1	+ 95
South Carolina	1.3	2.7	+108	2.6	+100	2.6	+100	2.5	+ 92
Tennessee	1.4	3.2	+129	3.2	+129	3.2	+129	3.2	+129
Virginia	2.0	2.8	+ 40	2.7	+ 35	2.7	+ 35	2.7	+ 35
West Virginia	1.0	1.4	+ 40	1.4	+ 40	1.4	+ 40	1.4	+ 40
Total for Southeast	20.5	37.5	+ 83	37.8	+ 84	37.2	+ 81	36.4	+ 78

Table 23

PLAINS REGION: CHANGES IN PROPORTIONS OF ELIGIBLE CHILDREN UNDER ALTERNATIVE POVERTY CRITERIA

State (1)	Percent of National Title I Children (2)	Percent of National Orshansky Children (3)	Percent Change from Present (4)	Percent of National $3000 Children (5)	Percent Change from Present (6)	Percent of National $4000 Children (7)	Percent Change from Present (8)	Percent of National $5000 Children (9)	Percent Change from Present (10)
Iowa	.8	.9	+13	.9	+13	.9	+13	1.0	+25
Kansas	.8	.8	0	.8	0	.8	0	.9	+13
Minnesota	1.3	1.3	0	1.2	+ 8	1.3	0	1.4	+ 8
Missouri	1.6	2.2	+38	2.3	+44	2.3	+44	2.3	+44
Nebraska	.5	.6	+20	.6	+20	.6	+20	.7	+40
North Dakota	.2	.4	+80	.3	+50	.3	+50	.4	+50
South Dakota	.3	.4	+33	.4	+33	.5	+66	.5	+67
Total for Plains	5.6	6.7	+20	6.5	+16	6.8	+21	7.1	+27

Table 24

NEW ENGLAND REGION: CHANGES IN PROPORTIONS OF ELIGIBLE CHILDREN UNDER ALTERNATIVE POVERTY CRITERIA

State (1)	Percent of National Title I Children (2)	Percent of National Orshansky Children (3)	Percent Change from Present (4)	Percent of National $3000 Children (5)	Percent Change from Present (6)	Percent of National $4000 Children (7)	Percent Change from Present (8)	Percent of National $5000 Children (9)	Percent Change from Present (10)
Connecticut	1.2	.7	-42	.8	-33	.8	-33	.8	-33
Maine	.5	.5	0	.4	-20	.4	-20	.5	0
Massachusetts	2.8	1.5	-46	1.5	-46	1.6	-43	1.6	-43
New Hampshire	.2	.2	0	.2	0	.2	0	.2	0
Rhode Island	.4	.3	-25	.3	-25	.3	-25	.3	-25
Vermont	.2	.2	0	.1	-50	.1	-50	.2	0
Total for New England	5.3	3.4	-36	3.3	-38	3.4	-36	3.5	-34

Table 25

PACIFIC REGION: CHANGES IN PROPORTIONS OF ELIGIBLE CHILDREN UNDER ALTERNATIVE POVERTY CRITERIA

State (1)	Percent of National Title I Children (2)	Percent of National Orshansky Children (3)	Percent Change from Present (4)	Percent of National $3000 Children (5)	Percent Change from Present (6)	Percent of National $4000 Children (7)	Percent Change from Present (8)	Percent of National $5000 Children (9)	Percent Change from Present (10)
Alaska	.2	.2	0	.2	-25	.1	-30	.1	-30
California	11.7	7.7	-34	7.9	-33	7.9	-32	7.9	-32
Hawaii	.4	.3	-25	.2	-38	.2	-40	.2	-40
Nevada	.1	.1	0	.2	+50	.2	+50	.2	+60
Oregon	.7	.7	0	.7	+ 7	.7	+ 3	.8	+ 7
Washington	1.4	1.0	-28	1.1	-23	1.1	-21	1.1	-21
Total for Pacific	14.5	10.0	-33	10.2	-32	10.3	-31	10.3	-31

Table 26

SOUTHWEST REGION: CHANGES IN PROPORTION OF ELIGIBLE
CHILDREN UNDER ALTERNATIVE POVERTY CRITERIA

State (1)	Percent of National Title I Children (2)	Percent of National Orshansky Children (3)	Percent Change from Present (4)	Percent of National $3000 Children (5)	Percent Change from Present (6)	Percent of National $4000 Children (7)	Percent Change from Present (8)	Percent of National $5000 Children (9)	Percent Change from Present (10)
Arizona	.8	1.1	+38	1.1	+38	1.1	+38	1.0	+25
New Mexico	.7	1.0	+43	1.0	+43	1.0	+43	1.0	+43
Oklahoma	1.0	1.6	+60	1.6	+60	1.6	+60	1.7	+70
Texas	4.5	8.3	+84	7.6	+69	7.8	+73	7.9	+76
Total for Southwest	7.0	12.0	+71	11.3	+61	11.5	+64	11.5	+64

Table 27

GREAT LAKES REGION: CHANGES IN PROPORTIONS OF ELIGIBLE CHILDREN UNDER ALTERNATIVE POVERTY CRITERIA

State (1)	Percent of National Title I Children (2)	Percent of National Orshansky Children (3)	Percent Change from Present (4)	Percent of National $3000 Children (5)	Percent Change from Present (6)	Percent of National $4000 Children (7)	Percent Change from Present (8)	Percent of National $5000 Children (9)	Percent Change from Present (10)
Illinois	6.7	3.9	-42	3.9	-42	4.0	-40	3.9	-42
Indiana	1.5	1.6	+ 7	1.6	+ 7	1.6	+ 7	1.7	+13
Michigan	5.1	2.9	-43	3.0	-41	2.9	-43	2.8	-45
Ohio	4.2	3.6	-14	3.9	- 7	3.7	-12	3.6	-14
Wisconsin	1.5	1.3	-13	1.3	-13	1.4	- 7	1.4	- 7
Total for Great Lakes	19.0	13.3	-30	13.7	-28	13.5	-29	13.4	-29

Table 28

MIDEAST REGION: CHANGES IN PROPORTIONS OF ELIGIBLE CHILDREN UNDER ALTERNATIVE POVERTY CRITERIA

State (1)	Percent of National Title I Children (2)	Percent of National Orshansky Children (3)	Percent Change from Present (4)	Percent of National $3000 Children (5)	Percent Change from Present (6)	Percent of National $4000 Children (7)	Percent Change from Present (8)	Percent of National $5000 Children (9)	Percent Change from Present (10)
New Jersey	3.9	2.0	-49	2.0	-49	2.1	-46	2.1	-46
New York	13.0	6.8	-48	6.9	-47	7.0	-46	7.1	-45
Pennsylvania	5.9	4.0	-32	3.8	-36	3.9	-34	4.1	-31
Delaware	.2	.2	0	.2	0	.2	0	.2	0
Maryland	1.9	1.5	-21	1.6	-16	1.5	-21	1.5	-21
D.C.	.9	.5	-44	.5	-44	.5	-44	.5	-44
Total for Mideast	25.7	15.0	-41	15.1	-41	15.2	-41	15.5	-40

Table 29

ROCKY MOUNTAIN REGION: CHANGES IN PROPORTIONS OF ELIGIBLE CHILDREN UNDER ALTERNATIVE POVERTY CRITERIA

State (1)	Percent of National Title I Children (2)	Percent of National Orshansky Children (3)	Percent Change from Present (4)	Percent of National $3000 Children (5)	Percent Change from Present (6)	Percent of National $4000 Children (7)	Percent Change from Present (8)	Percent of National $5000o Children (9)	Percent Change from Present (10)
Colorado	1.0	.9	-10	.9	-10	.9	-10	1.0	0
Idaho	.2	.3	+50	.3	+50	.3	+50	.3	+50
Montana	.2	.3	+50	.3	+50	.3	+50	.3	+50
Utah	.4	.4	0	.4	0	.4	0	.4	0
Wyoming	.1	.1	0	.1	0	.1	0	.1	0
Total for Rocky Mountains	2.0	2.1	+ 5	2.1	+ 5	2.1	+ 5	2.1	+ 5

substantial dollar redistributions involved in the shift to any of the alternative poverty criteria reflect shifts needed to strengthen Title I programs in states with poor AFDC programs. These states are principally located in the South, and to a lesser degree in the Plains and Rocky Mountain areas.

Partial Summary

It is easy to find fault with the details of the original Census data and AFDC distribution formula for ESEA Title I. Even if Census data were frequently updated, many frailties would remain. For instance, the use of an annual family income level of $2,000 is a naïve definition of poverty. Inclusion of AFDC children is insufficient to rectify the condition. AFDC payments are far from uniformly administered within and among states.

Efforts to utilize alternative poverty criteria so as to correct for such weaknesses eventuate in the following general conditions:

- Alternative poverty criteria--the Orshansky index and annual family income levels of $3,000, $4,000, $5,000, and $6,000--all have approximately the same redistributional effects when compared with the present Title I allocation patterns. Specifically, they shift funds from districts that are now heavily populated by poor children to ones which have smaller concentrations. This is particularly true for industrialized states with large urban populations. For example, in Massachusetts, Boston would lose a substantial proportion of its present Title I funds to the other districts in the state.
- The interstate redistribution patterns accompanying a change in poverty formula components is similar to the intrastate pattern. Specifically, industrialized states would have their share of Title I funds reduced at the expense of less industrial states, primarily those in the South and Southwest.

IV ALTERNATIVE POVERTY VERSUS TEST SCORE CRITERIA

When each is compared with the present ESEA Title I allocation formula, both test score and alternative poverty formula have redistribution effects. Each of these two formal strategies shifts Title I funds from present high poverty districts. However, in this section we pose a different question: "What is the distributional effect when test scores are compared with the alternative poverty measures?"

To answer this question we conducted intrastate simulations for 12 states (our original 13 minus Hawaii). The alternative poverty measures are the Orshansky index and annual family incomes of $3,000, $4,000 and $6,000. As in all our simulations, we have assumed a constant dollar appropriation level for Title I funds. Thus, the shifts described are shifts in proportions of eligible students. (Complete simulation results are provided in Appendix D.) For this discussion, we limit ourselves to the findings for Massachusetts.

Massachusetts' School Districts

We first categorized the districts by the proportions of their enrollment who are defined as poor under the Orshansky index, and then observed the changing proportions of this "eligible" population at varying test score percentile cutoff points. Table 30 shows that in Massachusetts, it is the relatively low poverty districts (those with fewer than 10 percent of their students qualifying as Orshansky poor) that would gain Title I funds. All other districts would suffer a decrease in the number of eligible students.

Table 30

MASSACHUSETTS: PERCENT CHANGE IN NUMBER OF CHILDREN BETWEEN ORSHANSKY-DEFINED POVERTY VERSUS TEST SCORE CRITERIA*

					Test Score Definition of Low Achiever					
Degree of Poverty Impactedness (1)	Number of Districts (2)	Total Enrollment (3)	% of State's Enrollment (4)	% of State's Poor Children (5)	Bottom 10% (6)	Bottom 15% (7)	Bottom 20% (8)	Bottom 25% (9)	Bottom 30% (10)	Bottom 35% (11)
0 - 5%	130	394,793	33	14	+74	+82	+88	+94	+97	+100
5% - 10%	121	510,344	43	38	+13	+12	+12	+12	+11	+ 11
10% - 15%	39	133,756	11	17	-23	-24	-24	-25	-25	- 26
15% - 20%	14	110,047	9	20	-33	-35	-36	-38	-39	- 40
20% - 25%	13	49,391	4	11	-38	-41	-44	-46	-47	- 48
25% - 30%	1	586	.05	.20	-15	-22	-27	-31	-31	- 34
30% - 35%	1	230	.02	.08	-63	-71	-71	-71	-73	- 71
35% - 40%	0									
40% - 45%	1	126	.01	.06	-91	-79	-82	-79	-80	- 81
Over 45%	0									

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*Totals do not always sum to 100% due to rounding.

When annual family income levels of $3,000, $4,000, and $6,000 are utilized instead of the Orshansky index, the result is essentially the same: as Tables 31, 32, and 33 show, Title I funds would still shift in a substantial way from high to low poverty districts. Specifically, it is those districts with fewer than 10 percent of their students poverty-eligible that would profit from a test score criterion. In Massachusetts, such low poverty districts contain over half the state's total student enrollment. The net effect of a switch to Orshansky or a higher annual income poverty definition is to move Title I funds away from those units now benefiting from them and into a much wider array of school districts.

An interesting sidelight stemming from these analyses is the fact that, when compared with the Orshansky index or a higher income definition of poverty, the test score allocation criteria are not as sensitive to the percentile cutoff as is the case when test scores are compared with the present Title I formula. Apparently, most low test scores are embedded within the population of children whose families have an annual income of under $6,000. Thus, when the test score percentile cutoff is elevated upward toward the mean, there is very little net effect upon funding distribution patterns.

Partial Summary

Alternative poverty criteria--the Orshansky index and higher annual family income levels and test scores have much the same redistributional effects. Specifically:

- When compared with either Orshansky measured poverty or higher income level poverty, test scores will concentrate Title I funds in districts with low proportions (under 10 percent) of poor students.
- A test score allocation criterion, when compared with Orshansky and higher income level poverty, would redistribute Title I funds to a wider number of school districts throughout a state.

Table 31

MASSACHUSETTS: PERCENT CHANGE IN NUMBER OF CHILDREN FROM FAMILIES WITH ANNUAL INCOME UNDER $3,000 VERSUS TEST SCORE CRITERIA*

					Test Score Definition of Low Achiever					
Degree of Poverty Impactedness (1)	Number of Districts (2)	Total Enrollment (3)	% of State's Enrollment (4)	% of State's Poor Children (5)	Bottom 10% (6)	Bottom 15% (7)	Bottom 20% (8)	Bottom 25% (9)	Bottom 30% (10)	Bottom 35% (11)
0 - 5%	229	818,369	68	46	+30	+32	+33	+34	+35	+36
5% - 10%	72	325,341	27	42	-21	-22	-22	-23	-24	-24
10% - 15%	16	54,629	5	12	-39	-41	-44	-46	-46	-48
15% - 20%	1	578	.05	.18	-74	-76	-77	-75	-75	-76
20% - 25%	1	126	.01	.06	-91	-79	-81	-78	-80	-81
25% - 30%	1	230	.02	.12	-74	-80	-80	-80	-81	-80
30% - 35%	0									
35% - 40%	0									
40% - 45%	0									
Over 45%	0									

*Totals do not always sum to 100% due to rounding.

Table 32

MASSACHUSETTS: PERCENT CHANGE IN NUMBER OF CHILDREN FROM FAMILIES WITH ANNUAL INCOME UNDER $4,000 VERSUS TEST SCORE CRITERIA*

					Test Score Definition of Low Achiever					
Degree of Poverty Impactedness (1)	Number of Districts (2)	Total Enrollment (3)	% of State's Enrollment (4)	% of State's Poor Children (5)	Bottom 10% (6)	Bottom 15% (7)	Bottom 20% (8)	Bottom 25% (9)	Bottom 30% (10)	Bottom 35% (11)
0 - 5%	170	581,101	48	26	+63	+64	+66	+67	+68	+69
5% - 10%	105	385,418	32	34	- 9	- 9	- 8	- 7	- 7	- 6
10% - 15%	27	178,700	15	28	-29	-30	-31	-32	-33	-34
15% - 20%	15	53,112	4	12	-40	-42	-45	-47	-47	-49
20% - 25%	1	586	.04	.20	-12	-19	-24	-28	-29	-32
25% - 30%	0									
30% - 35%	1	126	.01	.06	-91	-78	-81	-78	-79	-81
35% - 40%	1	230	.02	.10	-70	-77	-76	-76	-78	-77
40% - 45%	0									
Over 45%	0									

*Totals do not always sum to 100% due to rounding.

Table 33

MASSACHUSETTS: PERCENT CHANGE IN NUMBER OF CHILDREN FROM FAMILIES WITH ANNUAL INCOME UNDER $6,000 VERSUS TEST SCORE CRITERIA*

					Test Score Definition of Low Achiever					
Degree of Poverty Impactedness (1)	Number of Districts (2)	Total Enrollment (3)	% of State's Enrollment (4)	% of State's Poor Children (5)	Bottom 10% (6)	Bottom 15% (7)	Bottom 20% (8)	Bottom 25% (9)	Bottom 30% (10)	Bottom 35% (11)
0 - 5%	54	129,976	11	3	+141	+160	+171	+183	+190	+194
5% - 10%	125	501,662	42	26	+ 50	+ 49	+ 50	+ 50	+ 51	+ 52
10% - 15%	62	215,443	18	18	- 15	- 12	- 11	- 10	- 9	- 8
15% - 20%	40	126,383	11	15	- 18	- 18	- 18	- 19	- 19	- 20
20% - 25%	14	89,306	7	13	- 23	- 24	- 26	- 27	- 28	- 29
25% - 30%	12	95,820	8	17	- 30	- 31	- 33	- 35	- 36	- 37
30% - 35%	10	39,741	3	9	- 37	- 40	- 43	- 45	- 46	- 47
35% - 40%	1	586	.05	.10	- 7	- 14	- 20	- 24	- 25	- 28
40% - 45%	0									
Over 45%	2	356	.03	.10	- 75	- 75	- 75	- 74	- 76	- 75

*Totals do not always sum to 100% due to rounding.

- The test score percentile cutoff defining low achievement is not a sensitive matter when compared with alternative poverty measures. Whether low achievement is defined at the 10th or the 35th percentile has relatively little effect upon allocations.

V POVERTY AND TEST SCORE STRATEGIES COMBINED

Given that poverty and pupil performance measures have both advantages and disadvantages, is there any way that they can be combined to overcome their weaknesses and maximize their strengths? If such a linkage were made, it might be possible to surmount logistical and administrative weaknesses of the two types of eligibility measures. Moreover, combining the two would take official cognizance of the fact that, though practically linked, the two phenomena are conceptually distinct.

A child from a low income family may or may not be academically deficient. Regardless of academic standing, it is likely that the low income student has not had the social opportunities that would permit fulfillment of his or her potential. "Compensatory education" in this instance is directed at making up a deficit. Whether it is a deficit between the student's present low achievement and some minimum expected level of school performance or between the student's actual and potential level of performance is, in this instance, inconsequential.

Similarly, an academically deficient student may or may not come from a low income household. All that is important from society's standpoint is that the individual has not reached some minimally acceptable level of school performance and, therefore, is in need of compensatory education. The presence or absence of poverty may shape the kind and amount of the compensatory services made available to the child. However, the presence or absence of proverty should not determine whether or not an academically deficient child receives needed school services.

Double-Counting Formula Simulations

Tables 34 through 39 display the results of two different kinds of double-count formula simulations. For six states--California, Alabama, Delaware, Iowa, Massachusetts, and New Mexico--we analyzed the consequences of permitting school districts to determine Title I eligible students by counting both their poverty and their low achieving pupils. It is the sum of these two enumerations that would provide the Title I eligibility figure. The initial set of simulations (Tables 34 through 36) of such a double-count formula was done with the original Title I formula (Census data plus AFDC) as the poverty measure. The second set of double-count simulations (Tables 37 through 39) was performed using the Orshansky index. Within both sets of simulations, a further breakdown by urban/suburban/rural area and by ethnic group is provided.

The end product of both sets of double-count simulations is a suggestion of the relative amount of additional Title I funds that would be necessary if poverty and poor performance were incoporated in the allocation formula. Under the first double-count simulation (Census data and AFDC plus low achievement) the number of Title I eligible students would increase by 123 percent. Under the second set of simulations (Orshansky index plus low achievement) the number of Title I eligible students would increase by 144 percent.

Almost by definition, all states and almost all districts within states would benefit financially under a double-counting formula. Among states, Alabama would profit most from using a double-count formula based on the Orshansky index. As we have discussed previously, this is probably true because of the low funding level of Alabama's welfare programs, which understate the number of poverty children at present. This inadequacy would be compensated for under the Orshansky index, thus resulting in the relatively greater gain for Alabama under a double count.

(Text is continued on page II-73.)

Table 34

SIX STATE SUMMARY OF FUNDING CHANGES WITH DOUBLE-COUNTING PRESENT POVERTY AND LOW PERFORMANCE

Percentage of present Title I students in district	California	Alabama	Delaware	Iowa	Massachusetts	New Mexico
0 - 5%	254.32	353.45	256.80	221.05	208.23	578.95
5+ - 10%	176.98	349.24	97.39	137.50	132.87	134.64
10+ - 15%	140.49	277.22	113.94	84.02	94.62	106.34
15+ - 20%	118.91	254.14	82.58	63.86	73.72	87.92
20+ - 25%	91.63	211.05	64.37	76.48	67.74	71.09
25+ - 30%	102.21	179.96	-	48.10	59.58	101.47
30+ - 35%	74.72	147.84	-	23.53	50.33	132.99
35+ - 40%	73.32	156.33	-	35.14	-	41.67
40+ - 45%	61.02	137.50	65.53	-	-	21.05
Over 45%	115.59	125.74	-	-	31.56	64.60
Totals	122.57	264.00	83.10	76.28	39.66	105.22

Table 35

CALIFORNIA: CHANGES WITH DOUBLE-COUNTING PRESENT POVERTY AND LOW PERFORMANCE, BY URBAN/RURAL/SUBURBAN DISTRICT

Type of District	Number of Districts	Total Enrollment	Percent of Present Funds	Percent of New Funds	Change in Funding
Large cities over 200,000	7	1,037,061	39.23%	76.71%	95.54%
Suburbs of Large Cities Over 200,000	153	1,470,810	23.38%	56.76%	142.77%
Cities 50,000 to 200,000	36	647,989	15.07%	33.41%	121.70%
Rural Areas and Small Towns	819	1,292,239	22.30%	55.69%	149.73%
Totals	1,015	4,448,099	100.00	222.57	122.57

Table 36

CALIFORNIA: CHANGES WITH DOUBLE-COUNTING PRESENT POVERTY AND LOW PERFORMANCE, BY PERCENTAGE OF MINORITY STUDENTS

Percentage of present minority students in district	Number of Districts	Total Enrollment	Percent of Present Funds	Percent of New Funds	Change In Funding
0 - 5%	203	299,674	2.11%	5.87%	177.83
5+ - 10%	202	670,065	6.09%	17.79%	192.07%
10+ - 15%	135	598,799	6.38%	16.82%	163.80%
15+ - 20%	84	388,790	6.84%	15.26%	123.21%
20+ - 25%	63	308,586	5.10%	13.52%	165.05%
25+ - 30%	64	430,647	8.36%	19.75%	136.26%
30+ - 35%	45	199,356	4.92%	10.88%	121.11%
35+ - 40%	52	306,482	9.38%	18.90%	101.49%
40+ - 45%	34	100,979	2.86%	6.84%	139.05%
Over 45%	133	1,144,721	47.96%	96.92%	102.10%
Totals	1,015	4,448,099	100.00	222.57	122.57

Table 37

SIX STATE SUMMARY OF FUNDING CHANGES WITH DOUBLE-COUNTING ORSHANSKY POVERTY AND LOW PERFORMANCE

Percentage of Orshansky students in district	California	Alabama	Delaware	Iowa	Massachusetts	New Mexico
0 - 5%	258.30	69.06	110.00	269.10	240.83	149.03
5+ - 10%	246.50	319.48	105.01	146.56	152.54	123.43
10+ - 15%	142.18	145.90	67.65	87.78	106.15	49.68
15+ - 20%	113.02	109.34	77.04	60.78	90.81	61.95
20+ - 25%	119.47	123.80	56.11	62.22	84.16	58.58
25+ - 30%	88.03	111.95	-	68.15	-	52.29
30+ - 35%	83.02	111.20	-	26.98	50.04	69.97
35+ - 40%	66.67	103.81	70.94	20.81	-	25.39
40+ - 45%	51.38	100.46	-	-	-	53.63
Over 45%	56.52	75.60	-	31.41	-	56.26
Total	160.54	101.35	79.16	90.81	137.04	53.78

Table 38

CALIFORNIA: CHANGES WITH DOUBLE-COUNTING ORSHANSKY POVERTY AND LOW PERFORMANCE

Type of District	Number of Districts	Total Enrollment	Percent of Orshansky Funds	Percent of New Funds	Percent change In Funding
Large Cities over 200,000	7	1,037,061	24.21%	73.29%	+202.73%
Suburbs of large cities over 200,000	153	1,470,810	25.59%	69.31%	+170.85%
Cities 50,000 - 200,000 (not near large cities)	36	647,989	18.03%	42.06%	+133.28%
Rural areas and Small Towns	819	1,292,239	32.17%	75.88%	+135.87%
Totals	1,015	4,448,099	100.00	260.54	160.54

Table 39

CALIFORNIA: CHANGES WITH DOUBLE-COUNTING ORSHANSKY POVERTY AND LOW PERFORMANCE, BY PERCENTAGE OF MINORITY STUDENTS

Percentage of minority students in district	Number of Districts	Total Enrollment	Percent of Orshansky Funds	Percent of New Funds	Change in In Funding
0 - 5%	203	299,674	3.77%	8.69%	+130.65%
5+ - 10%	202	670,065	9.51%	24.84%	+161.12%
10+ - 15%	135	598,799	9.85%	23.54%	+138.84%
15+ - 20%	84	388,790	8.73%	19.77%	+126.40%
20+ - 25%	63	308,586	7.26%	18.29%	+151.99%
25+ -30%	64	430,647	11.76%	26.68%	+126.83%
30+ - 35%	45	199,356	5.64%	13.44%	+138.29%
35+ - 40%	52	306,482	9.70%	22.17%	+128.51%
40+ - 45%	34	100,979	2.95%	8.16%	+176.87%
Over 45%	133	1,144,721	30.82%	94.96%	+208.09%
Totals	1,015	4,488,099	100.00	260.54	160.54

Within states, it is the districts that currently have low concentrations of poverty children which would benefit most from a double count. Again, somewhat obviously, these districts would benefit because poverty and low performance are not identical. Low poverty districts, when permitted to determine eligibility by low achievement, would thus gain in their numbers of eligible students. The finding holds for the analyses by type of school district and by ethnic group. Within California, it is the suburban and rural school districts, and those with the lowest concentrations of ethnic minorities, that would gain the largest number of eligible children under a double count. By the nature of double counting, this would occur without diminishing the number of eligible students in cities or in other districts with high concentrations of poor and low achieving students.

If a double-count formula were fully funded, it would expand the base of Title I without eroding allocations to present recipient districts. However, it would be extraordinarily expensive to fund. Total Title I appropriations would have to increase by more than $2 billion over present funding levels. For this reason we move to our next four sets of simulations; they demonstrate ways in which both poverty and low performance can be utilized, but with substantially lower amounts of federal money being required. By so doing, we hope to suggest a politically more feasible set of strategies.

Alternative Counting Simulations

The following four sets of simulations were designed to illustrate the potential effects of alternating poverty with student performance as Title I allocation measures. In essence, there are two major simulations here, each of which has two variations. First, we simulated the distributional consequences of permitting school districts to compare the number of eligible students under the present Title I poverty formula (children from families with annual incomes below $2,000 and AFDC children) with the number of children who would be eligible under a test score definition. The district would then be able to select *the greater of the two* eligibility numbers. In performing this simulation, and all the other simulations we discuss in this section as well, we assume that the total Title I dollar appropriation would be increased to encompass the additional numbers of eligible students. In effect, then, permitting districts to choose the higher of the two eligibility calculations would "hold harmless" the allocations for all school districts. No district could receive less Title I money than is currently the case; however, a substantial number of districts would gain.

The second major set of simulations contains the essence of number one above, but replaces the present Title I poverty formula with the Orshansky index. In short, in this analysis, a school district chooses the greater number of eligible students according to (1) Orshansky poverty or (2) academic deficiently as defined by test scores.

Within each of the above-described sets of simulations we performed two additional analyses. First, we made each school district compute its Title I entitlement on the sole basis of poverty students, *unless its academically deficient students exceeded 16 percent of its student enrollment*. If the latter condition were the case, then the district could base its Title I entitlement on the larger figure--poverty eligible students or test score eligible students. This analysis was conducted using both the present Title I proverty formula and the Orshansky index. Again, we assumed that total Title I dollar appropriations would be expanded to fund the additional eligible students.

The rationale behind this subset of simulations is that, within reason, districts should expect to absorb the costs of compensating to some degree for low performing students. However, when the proportion of these students reaches a critical point--16 percent was arbitrarily selected as an illustrative level--then the district is faced with an added burden of such proportions as to justify external funding assistance. Of course, this decision rule of having a district absorb a specified level of academically deficient students on its own resources could also be made to hold for low proportions of poverty students. However, the political unreality of such a move argued against our attempting to simulate a poverty absorption decision rule for this set of analyses.

In addition to simulating the 16 percent low performance absorption rule for each of the two major analyses (present poverty and alternative poverty measures), we analyzed the consequences for California of all four formula variations upon urban school districts and ethnic minorities. The resultant alternative counting simulations distribute themselves over the following categories:

Simulation I

Present Poverty + Low Performance	
Effect on urban areas	Effect on ethnic minorities

No absorption of low performance

Simulation II

Alternative Poverty + Low Performance	
Effect on urban areas	Effect on ethnic minorities

Simulation III

Present Poverty + Low Performance	
Effect on urban areas	Effect on ethnic minorities

16% absorption of low performance

Simulation IV

Alternative Poverty + Low Performance	
Effect on urban areas	Effect on ethnic minorities

Simulation I Results

Table 40 displays the funding increments, by category of poverty impacted school district, for the six states for which these analyses were conducted. Poverty in this instance is measured by the present Title I formula ($2,000 and AFDC). We can see that when districts are permitted to select either their poverty eligible or test score eligible students, they gain substantial funds. The range of additional funds is from a low of 5.96 percent for the state of Iowa to 164.31 percent for Alabama.[*] The latter figure reflects the failure of the present Title I formula to measure accurately Alabama's poverty, and thus permits the state to profit greatly from disproportionately large numbers of low performing children.

Table 41 demonstrates for California that the alternative count Title I formula would bring substantial benefits to small cities, suburbs, and rural areas. These are the types of school districts that would gain the most new money under such an arrangement. Large city districts would gain only slightly. As we have already stated, under this funding arrangement, no districts would lose funds.

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[*] See the note in Appendix C regarding Iowa figures for Simulations I, III, and V.

Table 40

SIX STATE SUMMARY OF FUNDING CHANGES UNDER SIMULATION I (PRESENT POVERTY PLUS LOW PERFORMANCE WITH NO ABSORPTION)

Percentage of present Title I students in district	California	Alabama	Delaware	Iowa	Massachusetts	New Mexico
0-5%	166.45	258.56	156.80	122.79	111.66	502.87
5+-10%	80.85	249.39	13.16	48.08	38.83	40.32
10+-15%	42.98	177.31	13.94	8.09	11.64	12.15
15+-20%	27.89	155.04	10.85	1.11	1.67	17.72
20+-25%	8.02	110.86	0	.87	.85	12.12
25+-30%	4.13	79.46	--	0	0	11.80
30+-35%	.02	47.92	--	0	0	35.74
35+-40%	.62	56.21	--	0	-	0
40+-45%	0	37.64	0	-	-	0
Over 45%	17.33	26.53		-	0	0
Totals	30.02	164.31	11.82	5.96	14.47	18.86

Table 41

CALIFORNIA: FUNDING CHANGES UNDER SIMULATION I, BY RURAL/URBAN/SUBURBAN DISTRICT

Location of District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
Large Cities Over 200,000	7	1,037,061	39.23	40.36	2.88%
Suburbs of These Cities	153	1,470,810	23.38	34.68	48.33%
Cities 50,000-200,000 - Not Near Large Cities	36	647,989	15.07	19.70	30.72%
Rural Areas and Small Towns	819	1,292,239	22.30	35.28	58.20%
Totals	1,015	4,448,099	100.00*	130.02*	

*Sums may not total precisely due to rounding.

Table 42 displays the fact that it is school districts with the lowest concentrations of minority students that would gain Title I funds under the alternative counting stragety.

Simulation II Results

From Table 43 it can be seen that the use of the Orshansky index, instead of a $2,000 annual income level and AFDC children, markedly changes the funding pattern. In that it is based on a higher level of annual family income, the Orshansky index, it has the effect for much of the U.S. of increasing the number of poverty eligible children. By permitting districts alternative counting, we are enabling many of them to select from among two figures, both of which are frequently higher than their present number of eligible students. Thus, we see in Table 43 that all our sample states, except Alabama, gain Title I funds under the Orshansky index alternative count.

Tables 44 and 45 show that, for California, the Orshansky alternative count formula benefits urban school districts and areas with high concentractions of minority group children. Again, this would appear to be the effect of the more generous definition of poverty embedded in the Orshansky index compared with the present formula.

Simulations III and IV Results

Tables 46 through 51 present the results for the remaining two simulations. For both the present poverty formula and the Orshansky index we have analyzed the consequences of making school districts absorb the first 16 percent of their academically deficient students. Consequences of the absorption rule are twofold. First, it decreases the total amount of additional Title I money that would be necessary to fund the newly eligible students under alternative counting. This is particularly true under the present formula (Simulation III).

Table 42

CALIFORNIA: FUNDING CHANGES UNDER SIMULATION I, BY PERCENT OF MINORITY STUDENTS IN DISTRICT

Percentage of Minority Students in District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	203	299,674	2.11	3.93	85.62
5+ - 10%	202	670,065	6.09	12.08	98.32
10+ - 15%	135	598,799	6.38	10.80	69.31
15+ - 20%	84	388,790	6.84	9.21	34.74
20+ - 25%	63	308,386	5.10	8.52	66.95
25+ - 30%	64	430,647	8.36	11.63	39.12
30+ - 35%	45	199,356	4.92	6.74	37.12
35+ - 40%	52	306,482	9.38	10.67	13.78
40+ - 45%	34	100,979	2.86	4.16	45.37
Over 45%	133	1,144,721	47.96	52.28	9.01
Totals	1,015	4,448,099	100.00*	130.02*	

* Sums may not total precisely due to rounding.

Table 43

SIX STATE SUMMARY OF FUNDING CHANGES UNDER SIMULATION II (ALTERNATIVE POVERTY PLUS LOW PERFORMANCE WITH NO ABSORPTION)

Percentage of Orshansky students in district	California	Alabama	Delaware	Iowa	Massachusetts	New Mexico
0-5%	162.07	8.33	42.60	172.27	144.16	115.38
5+-10%	148.82	225.00	37.87	56.31	56.91	76.92
10+-15%	45.63	47.78	7.11	11.17	13.08	4.17
15+-20%	26.96	21.25	4.97	.92	1.97	.13
20+-25%	25.12	26.15	5.02	0	0	1.49
25+-30%	4.44	17.98	-	0	-	.49
30+-35%	7.66	17.00	-	0	0	5.84
35+-40%	3.88	9.63	4.97	0	-	0
40+-45%	2.63	8.71	-	-	-	1.47
Over 45%	.08	.33	-	0	-	.61
Totals	68.80	12.04	12.84	19.51	44.35	1.10

Table 44

CALIFORNIA: FUNDING CHANGES UNDER SIMULATION II, BY URBAN/RURAL/SUBURBAN DISTRICT

Percentage of Orshansky Students In District	Number of Districts	Total Enrollment	Percent of State's Orshansky Children	Percent New Children are of Orshansky Children	Change in Funding
Large Cities	7	1,037,061	24.21	50.40	108.17
Suburbs	153	1,470,810	25.59	38.74	51.38
Cities 50-20,000	36	647,989	18.03	23.83	32.15
Rural Areas and Small Towns	819	1,292,239	32.17	42.60	32.42
Totals	1,015	4,448,099	100.00*	155.59*	55.59

*Sums may not total precisely due to rounding

Table 45

CALIFORNIA: FUNDING CHANGES UNDER SIMULATION II, BY PERCENT OF MINORITY STUDENTS IN DISTRICT

Percentage of Minority Students In District	Number of Districts	Total Enrollment	Percent of State's Minority Students	Percent New Children are of Minority Students	Change in Funding
0 - 5%	203	299,674	3.77	4.17	10.57
5+ - 10%	202	670,065	9.51	11.93	25.41
10+ - 15%	135	598,799	9.85	11.18	13.45
15+ - 20%	84	388,790	8.73	10.31	18.13
20+ - 25%	63	308,586	7.26	10.72	47.71
25+ - 30%	64	430,647	11.76	15.47	31.54
30+ - 35%	45	199,356	5.64	8.17	44.83
35+ - 40%	52	306,482	9.70	12.90	32.94
40+ - 45%	34	100,979	2.95	5.31	79.93
Over 45%	133	1,144,721	30.82	65.43	112.29
Totals	1,015	4,448,099	100.00*	155.59*	

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*Sums may not total precisely due to rounding.

Table 46

SIX STATE SUMMARY OF FUNDING CHANGES UNDER SIMULATION III (PRESENT POVERTY PLUS LOW PERFORMANCE WITH 16 PERCENT ABSORPTION)

Percentage pf present Title I students in district	California	Alabama	Delaware	Iowa	Massachusetts	New Mexico
0-5%	37.29	205.88	0	0	17.38	408.72
5+-10%	48.56	246.07	0	26.83	6.68	3.27
10+-15%	36.87	176.83	0	5.18	5.63	10.33
15+-20%	27.88	155.04	+10.85	1.11	1.67	17.72
20+-25%	8.02	110.86	0	.87	.85	12.12
25+-30%	4.13	79.46	--	0	0	11.80
30+-35%	.02	47.92	--	0	0	35.74
35+-40%	.62	56.21	--	-	-	0
40+-45%	0	37.64	0	-	-	0
Over 45%	17.33	26.53	--	-	0	0
Totals	19.08	163.10	1.86	3.54	2.98	15.28

Table 47

CALIFORNIA: FUNDING CHANGES UNDER SIMULATION III, BY URBAN/RURAL/SUBURBAN DISTRICT

Location of District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
Large Cities Over 200,000	7	1,037,061	39.23	40.22	2.52
Suburbs of These Cities	153	1,470,810	23.38	29.62	26.68
Cities 50,000 - 200,000 - Not Near Large Cities	36	647,989	15.07	18.28	+21.30
Rural Areas and Small Towns	819	1,292,239	22.30	30.98	38.92
Totals	1,015	4,448,099	100.00*	119.10*	

* Sums may not total precisely due to rounding.

Table 48

CALIFORNIA: FUNDING CHANGES UNDER SIMULATION III, BY PERCENT OF MINORITY STUDENTS IN DISTRICT

Percentage of Minority Students in District	Number of Districts	Total Enrollment	Percent of State'e Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	203	299,674	2.11	2.47	16.87
5+ - 10%	202	670,065	6.09	8.32	36.52
10+ - 15%	135	598,799	6.38	7.62	19.55
15+ - 20%	84	388,790	6.84	8.06	17.44
20+ - 25%	63	308,586	5.10	7.79	52.74
25+ - 30%	64	430,647	8.36	11.26	34.73
30+ - 35%	45	199,356	4.92	6.64	34.95
35+ - 40%	52	306,482	9.38	10.59	12.88
40+ - 45%	34	100,979	2.86	4.11	43.41
Over 45%	133	1,144,721	47.96	52.25	8.95
Totals	1,015	4,448 099	100.00*	119.10*	

* Sums may not total precisely due to rounding.

Table 49

SIX STATE SUMMARY OF FUNDING CHANGES UNDER SIMULATION IV (ALTERNATIVE POVERTY PLUS LOW PERFORMANCE WITH 16 PERCENT ABSORPTION)

Percentage of Orshansky students in district	California	Alabama	Delaware	Iowa	Massachusetts	New Mexico
0-5%	36.31	0	4.94	12.11	18.80	84.62
5+-10%	126.45	225.00	37.87	15.63	6.86	61.54
10+-15%	41.25	47.78	4.96	6.59	8.34	0
15+-20%	26.96	21.25	4.97	.92	1.97	.13
20+-25%	25.12	26.15	5.02	0	0	1.49
25+-30%	4.44	17.98	--	0	-	.49
30+-35%	7.66	17.00	--	0	0	5.84
35+-40%	3.88	9.63	4.97	0	-	0
40+-45%	2.63	8.80	--	-	-	1.47
Over 45%	.08	.33	--	0	-	.61
Totals	55.59	12.03	9.38	6.35	7.02	1.03

Table 50

CALIFORNIA: FUNDING CHANGES UNDER SIMULATION IV, BY URBAN/RURAL/SUBURBAN DISTRICT

Percentage of Orshansky Students In District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
Large Cities	7	1,037,061	24.21	50.75	109.62
Suburbs	153	1,670,810	25.59	44.99	75.81
Smaller Cities	36	647,989	18.03	25.73	42.72
Rural Areas	819	1,292,239	32.17	47.37	47.09
Totals	1,015	4,448,099	100.00*	168.80*	68.80

*Sums may not total precisely due to rounding.

Table 51

CALIFORNIA: FUNDING CHANGES UNDER SIMULATION IV, BY PERCENT OF MINORITY STUDENTS IN DISTRICT

Percentage of Minority Students In District	Number of Districts	Total Enrollment	Percent of State's Minority Students	Percent New Children are of Minority Students	Change in Funding
0 - 5%	203	299,674	3.77	5.28	40.14
5+ - 10%	202	670,065	9.51	16.47	73.14
10+ - 15%	135	598,799	9.85	14.58	47.99
15+ - 20%	84	388,790	8.73	11.91	36.46
20+ - 25%	63	308,586	7.26	11.53	58.90
25+ - 30%	64	430,647	11.76	16.21	37.78
30+ - 35%	45	199,356	5.64	8.53	51.15
35+ - 40%	52	306,432	9.70	13.12	35.15
40+ - 45%	34	100,979	2.95	5.57	88.91
Over 45%	133	1,144,721	30.82	65.60	112.84
Totals	1,015	4,448,099	100.00%**	168.80**	68.80

*Sums may not total precisely due to rounding.

Second, particularly under Simulation VI, large urban districts and those areas with high concentrations of ethnic minority students would gain the most. The absorption rule operates to the disadvantage of suburban and small city school districts, which have some academically deficient students but do not suffer from high concentrations of them. When asked to pick up the costs of compensatory education for such students, these little-burdened districts profit little from alternative counting.

Holding Harmless

By weighting a state's average Title I gain by the number of pupils within its borders, we were able to calculate the five-state total mean for additional Title I funds under the four alternative counting and two double counting simulations.* These figures, shown below as the percent added on to present Title I funds, can be viewed as the costs, to the six states for which we conducted simulations, of holding all districts harmless:

Double counting	Simulation I	123.25%
	Simulation II	143.79
Alternative counting	Simulation III	42.32
	Simulation IV	54.56
	Simulation V	32.71
	Simulation VI	38.97

As can be seen from the above figures, the costs of double and alternative counting range from approximately 30 to 140 percent more than currently is spent for Title I. In dollar terms, this means that Congress would need to appropriate from $480 to $2,160 million over the present total national Title I funding level. Of course, these figures can be manipulated easily by varying components such as the absorption rate in Simulations III and IV.

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*Iowa is excluded from this average because of the problems previously mentioned and explained in Appendix C.

Partial Summary

By constructing a formula that permits school districts to double and alternatively count students--those eligible by a poverty definition and those eligible by a test score definition--and to take the total of the two or the higher of the two, we recognize that both poverty and low pupil performance are problems affecting the nation and worthy of nationwide efforts to alleviate. The double and alternative counting simulations gave the following results:

- Double counting holds all present districts harmless and adds substantially to districts that now are low in the proportions of their enrollments from low income and minority households.
- When the alternative-counting is accomplished with the present Title I formula, big city school districts would gain only a small amount, whereas small cities, suburbs, and rural areas would gain a great deal.
- Under a double counting formula, using the Orshansky index, Congress would have to increase the present Title I appropriation by more than 140 percent.
- When the poverty formula is switched to the Orshansky index and alternative counting is permitted, city school districts as well as high minority districts benefit more than suburban and low minority districts.
- Under the Orshansky alternative counting simulation. Congress would have to appropriate over 50 percent more money than at present.
- If districts were asked to absorb the first 16 percent of their academically deficient students, the number of additional eligible students is reduced: only 30 percent more Title I money would be needed.

- Under the Orshansky alternative counting formula and the 16 percent absorption rule, slightly more than 36 percent more money would be necessary.
- Under any of the double-counting alternative counting formulas tested, no districts would lose federal funds. They would, in effect, all be held harmless.

VI CONCLUSIONS AND RECOMMENDATIONS

Several significant findings emerged from our simulations.

First, by themselves, both pupil performance indicators and alternative poverty measures (the Orshansky index and higher family annual income levels) have an equalizing effect upon the distribution of Title I funds: that is, these new formula components would tend to shift compensatory education dollars from areas where they are now concentrated to a larger number of districts, frequently at the expense of big city districts and those high concentrations of minority students. (This finding is based on the assumption that the pool of Title I funds remains relatively stable and that there is no "hold harmless" provision incorporated into the law.) Thus we would argue against the inclusion of either simple formula revision.

Despite a tendency to dilute the distribution of Title I, the pupil performance measures appear to identify an additional population of students in need of more intensive schooling. It can be argued that if these students are permitted to remain academically deficient, they may become a hardship on the entire nation. Thus, federal intervention is justified. However, to do so at the expense of children from low income households--even if the latter are not found to be academically deficient by the limited measures now being used--strikes us as unwise and unfair. Students from poor families frequently need additional services if they are to realize the full potential of their capabilities. If such services are not provided by government, they are not likely to be provided at all.

Why not then immediately revise the ESEA Title I allocation formula to embody the principles of alternative or double-counting? If such distribution formulas called for higher levels of funding than the President and Congress can envision, then an absorption rule--making the states responsible for the compensatory education of a certain proportion of eligible students--could be established so as to adjust total state entitlements to the amount of available funding. Such adjustments would preserve the Treasury while simultaneously declaring both poverty and low academic performance to be national problems.

Perhaps surprisingly, we would caution against such a Title I formula revision at this time. Our caveat is extended not because of any abstract distaste for the principles involved. Rather, we believe that the present state of the art would make the distribution of Title I funds based on testing unreliable and expensive. Moreover, there is some risk that test score payments will establish performance disincentives. (By contrast, poverty measures appear relatively unobtrusive. In short, there are at present too many practical problems with using testing for allocation purposes.

What then to do with this idea that is good in the abstract, but impractical? We suggest an "experiment," specifically, an effort to assess systematically the consequences of distributing school aid based on pupil performance measures. Such a study need not be inordinately expensive. As mentioned in the Introduction, the state of Michigan currently has such a formula funding provision. Its effects could be carefully studied and the results used to inform federal officials as to whether or not the practical problems of testing could be overcome for ESEA Title I distribution purposes.*

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*Recently, two evaluations of Michigan's compensatory education program have appeared. See Ernest R. House, Wendell Rivers, and Daniel L. Stufflebeam, "An Assessment of the Michigan Accountability System," Phi Delta Kappan, June, 1974, pp. 663-669; and Jerome T. Murphy and David K. Cohen, "Accountability in Education--the Michigan Experience," Beyond the desire to incorporate pupil performance measures into a funding formula, we believe that an additional step forward can be taken. On balance, the Orshansky index strikes us as being a more sophisticated measure of poverty. It does not compensate for all the weaknesses of other poverty enumerators, but it is a relatively objective metric and can be improved still more. Conversely, income levels by themselves are overly simple, and AFDC arrangements show only the slowest promise of ever being standardized among and within states. Consequently, Congress should resist any further efforts to drop the Orshansky index, unless it is clear that there is a better measure of poverty.

As with the public performance measures, a caveat must be extended with the Orshansky index recommendation. By itself, this poverty measure will decrease the relative funding of cities and some categories of minority groups. Consequently, when incorporated into the Title I formula, it should be accompanied by a "hold harmless" or concentration provision for three or four years of transition.

Aside from their potential educational disadvantages, the incorporation of the Orshansky index and pupil performance measures as allocation criteria would probably attract a wider, more popular base of political support for Title I. During the 1960s, this hardly seemed a problem. However, events of the early 1970s have demonstrated that shifts in Administration policy and economic instability argue for well buttressed extensive electoral support for federal education programs.

The Public Interest, Summer, 1974, pp. 53-81. However, these studies do not assess the Michigan strategy with sufficient intensity to answer the questions posed in this effort.

REFERENCES

1. New York State Commission to Study the Cost, Quality, and Financing of Elementary and Secondary Education, Vol. I, Chapter 3, Viking Press, New York.

2. Charles S. Benson et al., Report to the Senate Select Committee on School District Finance, California State Senate, Sacramento (1972).

3. George Madaus and Richard F. Elmore, "Allocation of Federal Compensatory Education Funds on the Basis of Pupil Achievement Test Performance." Statement submitted to the General Education Subcommittee of the Committee on Education and Labor, U.S. House of Representatives (June 26, 1973).

4. State Educational Assessment Programs, 1973 Revision, published by the Educational Testing Service in collaboration with the Education Commission of The States.

Appendix A

WEAKNESSES OF CENSUS COUNT AND AFDC DATA FOR USE IN ESEA TITLE I DISTRIBUTION FORMULAS

Appendix A

WEAKNESSES OF CENSUS COUNT AND AFDC DATA FOR USE IN ESEA TITLE I DISTRIBUTION FORMULAS

In any discussion of methods of distributing funds by various criteria, one must assess not only the goals of the distribution itself, but also the validity of the measures used to determine eligibility. This appendix is such an assessment. First we explain the relationship between Census, AFDC counts, and the apportionment of ESEA Title I funds; then we examine those criteria in isolation to determine their relative strengths and weaknesses. Finally, we re-link the Census and AFDC counts with Title I apportionments to assess the biases that those counts might introduce into the system of ESEA grants.

The first issue to be dealt with, then, is the bases for apportioning Title I money. According to the governing regulations,* the size of the grant to a local educational agency is determined by applying a distribution formula to:

> The sum of (1) the number of children aged 5 to 17, inclusive, in families residing in the school district of the local educational agency and having an annual income of less than the low-income factor... [i.e., $2,000], (2) the number of children of those ages in families residing in the school district and receiving, from payments under the program of aid to

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*Regulations, Title I of the Elementary and Secondary Education Act of 1965, Public Law 89-10. Title 45, Part 116 of the Code of Federal Regulations, Revised and Amended.

> families with dependent children under a State plan approved under Title IV of the Social Security Act, an annual income in excess of the low-income factor,..., (3) the number of children of those ages living in the school district in institutions (other than institutions operated by the United States) for neglected or delinquent children (other than children for whom a State agency is directly responsible for providing free public education) and (4) the number of children of those ages living in foster homes in the school district and being supported with public funds.... (116.3)

There are biases introduced by each of these four criteria. However, since Census count children and those receiving aid to families with dependent children account for the vast majority of Title I eligible children, it is the major flaws of these two measures upon which we shall concentrate.

The first method--family annual income below $2,000--inaccurately counts eligible children because it is updated only once every ten years, by the decennial Census. However, because of the Herculean problems involved in amassing the voluminous data contained therein, it takes another four years before these data reach a form useful for counting purposes by other agencies. The result for a program such as ESEA Title I is that 1973 apportionments are based on 1960 Census figures, which used 1959 income figures as their base. In 1974, it is true. apportionments will use the latest, i.e., 1970, Census data; but these data will already be four years out-of-date since they were collected in 1970 on the basis of 1969 income figures.

Table A-1 illuminates the magnitude of the change between the 1960 and 1970 Census counts: a full 46.5 percent drop has been recorded in the number of families nationwide with incomes under $2,000, ranging by state from a 69 percent decrease in North Carolina to a 23 percent increase in Nevada.

Table A-1

CENSUS CHANGES IN NUMBER OF CHILDREN FROM FAMILIES WITH ANNUAL INCOME UNDER $2,000

(Selected States)

State	1960 Census	1970 Census	Difference
Alabama	242,522	95,984	-60.4
Arizona	38,851	29,328	-24.5
Connecticut	20,731	22,226	+7.2
Illinois	147,518	103,789	-29.6
Minnesota	77,280	31,885	-58.7
Nevada	3,230	3,964	+22.7
New Jersey	59,845	57,733	-3.5
North Carolina	323,096	99,224	-69.2
Pennsylvania	175,394	102,040	-41.8
Total U.S.	4,948,119	2,645,820	-46.5

The problems associated with using an AFDC-need index are even more complex. However, before describing these problems, it is important to understand the history and functions of the program.

When enacted in 1935, the Social Security Act included titles establishing the following categorical programs: Old Age Assistance, Aid to Families with Dependent Children, Aid to the Blind, and the Combined Program of Aid to the Aged, Blind, or Disabled. Originally the Social Security Act was not conceived as a comprehensive or integrated public welfare program. Rather its services were intended to assist states to support only persons unable to work owing to age or blindness, and families with no wage earner.

This intent in and of itself provokes a measurement problem. The narrowness of the eligibility definition means that a large proportion of the poor population and their dependents, including those who cannot find work or who work at very low wages, are denied eligibility and therefore relief under AFDC. Such families could not have been counted as part of the ESEA Title I entitlement for a district under the low-income factor, either, unless they had been so counted in the latest decennial Census year and had remained in the same school district. Also, if the family had been determined eligible for an AFDC grant but the size of that grant was under $2,000, the family would not be included for Title I counting purposes because the definition in the Regulations would assume that their income was as low as the last Census count and that they had already been included. However, if this were the 1973-74 school year, with entitlements based on 1960 data, the chances of such an assumption being correct are slim.

The President's Commission on Income Maintenance Programs estimated that over 58 percent of poor children were not covered by AFDC or OASDI. Furthermore, of 12.5 million poor children in 1966, a minimal estimate of 3.5 million received AFDC.* Although there are no precise figures, one must logically conclude that a sizable number were likewise not counted under the low-income factor because they had not been conceived at the time of the last census update.

In constructing the AFDC program, Congress initially established basic eligibility guidelines. An AFDC applicant must:

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*President's Commission on Income Maintenance Programs, Background Papers, Government Printing Office, Washington, D.C., p. 279, 1971.

> ... demonstrate that the child is deprived of the care and support of one parent by death, desertion, incapacity or, in 21 States, unemployment.
>
> If the cause is desertion, she must agree to report the child's father to the District Attorney and, usually swear out a warrant for nonsupport.
>
> In most States she must prove that she has been a resident for one year.
>
> She must show that she has no real property, or that it is valued within the prescribed limits.
>
> She must show that her income is insufficient for self-support--i.e., that there is a budget deficiency.
>
> She must meet whatever special requirements the State may impose.
>
> She must give a "social study" describing her background and history, and make a plan for herself and her child to lead toward self-support.
>
> She must submit to home visits by social workers.
>
> She must be prepared to have all statements referring to eligibility verified through birth or marriage certificates, credit checks, letters to employers, insurance companies, banks, etc.*

Since the program was to be state administered, Congress left to the states the task of adopting more precise eligibility definitions. The result has been a substantial difference between states regarding family composition and assets defined as appropriate for receiving assistance. One major difference occurred as recently as 1961 when Congress approved an amendment permitting AFDC payments to families in which the father was present and unemployed. (The program is called AFDC - Unemployed Parent, or AFDC-U). However, only 25 states take advantage of this new program; the remaining 25 permit no aid when the father is present in the household. (This is known as the "man-in-the-house" rule, and under it a child is deemed not to be "deprived of care and support" if there is a man present regardless of his legal requirement to support.) This dichotomy is of particular consequence because states without the AFDC-U program are those with the nation's highest unemployment rates. Their inclusion under AFDC-U would drastically alter current AFDC expenditure patterns.

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*Ibid., p. 273.

Another major variant between states is the residency requirement. Under the Social Security Act, states could impose a residency requirement not in excess of one year. Up until 1969, 11 states had no such residency requirements and 39 states had a one-year requirement. However, the Supreme Court banned residence requirements in 1969 as an infringement on the fundamental right to travel.*

Additional between-state variations include the following:

- A state may pay for children up to age 21 if they are in school:
  - 38 States have some such provision
  - 9 States will pay to a maximum age 18 under certain circumstances
  - 3 states will pay to maximum age 16, 19, or 20, respectively
- Real property used for a home may be owned
  - with no value specified in 32 states
  - value under $3,000 in 4 states
  - value $3,001 to $7,500 in 8 states
  - value over $7,500 in 6 states
- Personal property may be retained
  - with value under $500 in 12 states
  - value $500 to $749 in 12 states
  - value $750 to $999 in 10 states
  - value over $1,000 in 11 states
  - miscellaneous maximums by item or other limit in 5 states.

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*Shapiro v. Thompson, 394 U.S. 618, 89 S. Ct. 1322, 22 L. Ed. 2d 600 (1969).

- Liens, recoveries or assignments are required in 11 states.
- Provisions for disregarding certain income above the mandatory provisions are utilized in 25 states.*

In some states the "continued absence" of the father is defined as over 90 days, while in others a woman need only file for a legal separation or a divorce. Illegitimate children are often considered automatically deprived and no waiting period is required for receipt of aid.

In addition to numerous variations among states, there are some within states. According to the President's Commission on Income Maintenance Programs:

> ... the inequities within States are due to anomalies in the definition of unemployment. This definition, usually in terms of hours worked, may vary if one is already receiving assistance as opposed to one who is applying. A man on assistance working 20 hours may continue to be eligible while a man applying may be considered employed. In some cases, because of differences in hourly wages, a person working 20 hours a week may make more than one working 30 and still be eligible. A man who works 29 hours may be eligible but not if he works 30. A man on the programs [sic] allowed to deduct costs of employment and, even though he has no incentive such as the $30 and one-third provision, may still make more than his nonassistance counterpart because his cost of transportation is reimbursed while the person not on assistance must absorb him.†

Another study maintains that there is as much variance among counties in a given state as there is among states. A study conducted by the Social Workers Union revealed additional variance in the treatment of individuals within the same department and same work unit.‡

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*President's Commission, op. cit., p. 273.

†Ibid., p. 279.

‡American Civil Liberties Union and Social Workers Union 535, Welfare: The Question of Unequal Treatment.

Aside from the formal eligibility requirements, there are several additional disincentives in the AFDC program. In order to receive aid under the AFDC program, a woman must submit to a large number of personal questions. She must also be willing to swear out a NOLEO--Notice to Law Enforcement Officers--warrant accusing her husband of desertion and non-support. In Madison, Wisconsin it was reported in 1968 that she must submit to a lie detector test to prove her sincerity. If she lives in a small rural town, where she is known by everyone and will be branded as a welfare recipient, she has further disincentives for application. Finally, if she lives in a state such as Missisissippi, where the average 1969 per-person payment was $9.20 per month and the maximum family payment was $130 per month--or in any of the other 14 states where 1969 payments averaged less than $30 per recipient--she might think twice before further alienating her husband by swearing out a NOLEO warrant and further submitting herself to the attendant humiliations of welfare receipt.

Another skewing factor, especially for Southern states such as Mississippi and Arkansas, is that they have large numbers of persons receiving AFDC grants, but most recipients in Arkansas and all in Mississippi have incomes below $2,000 per year. As a consequence, although the number of people on AFDC drastically increased in the 1960s, only wealthier states with higher AFDC payments (i.e., over $2,000 per family yearly) received the yearly increments in ESEA moneys.

The above shows that there are several factors which serve to skew the distribution of federal moneys under the ESEA Title I program. Dependence upon decennial Census counts and AFDC grants, the latter in particular, build into the ESEA distribution structure the same defects that these two individual counts embody.

Four methods are currently being considered for providing an updated enumeration of eligible children at the county level (other than institutional children).* The first three involve adjustments to the initial distribution obtained from the decennial Census. The fourth is a separate enumeration, independent of the decennial Census:

(1) Adjust each county's enumeration by the amount of year-to-year change in the state total. In this method each county's share of the state total remains fixed between years of the decennial Census.

(2) Adjust each county's enumeration by the percentage change in the AFDC count for that county.† Then readjust the data for all counties in a state proportionately to conform to the state totals derived by other means.

(3) Adjust each county's enumeration by an increment proportional to the increment in the county's AFDC count. The adjustment is scaled in size in order to insure that the sum of adjusted county enumerations within a state add up to the known state enumeration.

(4) Use the most recently available AFDC count for each county, irrespective of Census data.

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*John J. Donaldson, Statement to General Subcommittee on Education of the Committee on Education and Labor, House of Representatives, Washington, D.C., Apr. 3, 1973. Published in Elementary and Secondary Education Amendments of 1973, Part 3 and Appendix, p. 2399.

†In this and the methods that follow, the AFDC count is the number of children (ages 5-17 or 0-20, depending on data availability) in families receiving AFDC payments in any amount, except those in the optional unemployed-parent program.

Appendix B

THE ORSHANSKY POVERTY INDEX

APPENDIX B

THE ORSHANSKY POVERTY INDEX

When the Council of Economic Advisors defined a poor family in 1963 as one with a yearly income of less than $3,000, it noted that this was "a crude and approximate measure." Subsequently, Mollie Orshansky of the Division of Research and Statistics, Social Security Administration, suggested that family size was a major variable in determining financial need. In 1965 she carried her research further to define "equivalent incomes at a poverty level for a large number of different family types."* Special schedules were also made for farm and nonfarm families, recognizing that farm families can generally live on less cash income than city dwellers.

In establishing the poverty index, Ms. Orshansky attempted to derive a standard based on the level of income remaining after basic food needs were met. She described her standard as "admittedly arbitrary, but not unreasonable.†

In determining basic food needs, Ms. Orshansky initially used the "low-cost" food plan of the U.S. Department of Agriculture. (Welfare agencies also typically employ this plan to establish grant levels.) In 1964 the USDA issued a second plan, known as the "economy" food plan, which costs 75 to 80 percent as much as the "low-cost" food plan and is a nutritionally adequate food plan designed for "emergency or temporary use when funds are low." The Orshansky index most often referred to is based on the latter. The low-cost plan assumes an average per-person cost of $5.90 per week; the economy plan assumes $4.60 per week per person.

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*Mollie Orshansky, "Counting the Poor: Another Look at the Poverty Profile," Social Security Bulletin, Vol. 28, No. 1, p. 3 (January 1965).

†Ibid., p. 4.

The food costs for each family size were determined according to the economy plan, at January 1964 prices, as a point of departure for estimating a base. If a family of three or more had an income that was less than three times that base, it was defined as poor. For families with two members, the ratio of food to income was set at 27 percent to allow for the relatively higher fixed costs of operating a small household. To account for all possible family combinations, several income points were developed for families at each size, but with different combinations of chilren and adults, and based on the sex of the head of the household. Then they were weighted together in accordance with the number of families of each type within the population to establish a basic set of income and expenditure figures.

Since farm families can usually count most of their household expenses and a percentage of their food expenditures as part of their agricultural operation, the Orshansky index assumed that they would need from 30 to 40 percent less cash income in order to maintain a living standard equal to that of a city family of similar composition.

In sum, the Orshansky index separated farm and nonfarm families and for each separately classified (1) unrelated individuals by age and sex, and families by sex of the household head, (2) total number of family members, and (3) number of children under age 18. The income was then compared with the appropriate minimum income schedule.

Orshansky herself has noted that while the Council of Economic Advisors (CEA) used $3,000 as the poverty standard for a family of two or more persons and $1,500 as the minimum standard for an individual, her standard pivoted (in 1965) around $3,130 for an average family of four persons and $1,540 for an unrelated individual. Although she admitted that her standard was not "materially different" from the earlier one and that the number of persons defined as poor was approximately the same (29.75 million compared with 28.50 million under the CEA definition), she noted that the major difference was in the types of persons and families counted. Also, though the number of poor individuals increased, the number of poor families decreased from 8.8 million in 1963 under CEA standards to 7.2 million by the Orshansky index. Fewer small families and more large families, with a higher number of children, would be counted. Farm families would also have a significantly different (and lower) representation in the index. Thus, while the previous standard represented the farm family and the aged as poor, the new Orshansky index portrayed the typical poor as young nonfarm families with several children. By either definition there were approximately two million nonwhite "poor units," but since the total number of families counted as poor was smaller, nonwhite families made a larger percentage of the total. The profile of single individuals remained approximately the same under either count since the income standard was approximately the same and few single individuals live on farms.

Orshansky noted that although the food-income index might be questioned by some, it at least provided an interim guide for measuring living standards of families in different circumstances. She realized that city dwellers were at a disadvantage to those in small towns and that income-consumption patterns needed further clarification.

Subsequently the Bureau of the Census and the Social Security Administration officially adopted what became known as the "Orshansky" poverty index. In 1969 a Federal Interagency Committee studied the index and recommended two modifications which were subsequently adopted: "1) that Social Security Administration thresholds for nonfarm families be retained for the base year 1963, but that annual adjustments in levels be based on changes in the Consumer Price Index (CPI) rather than on changes in the cost of food included in the economy food plan; and 2) that the farm thresholds be raised from 70 to 85 percent of the corresponding non-farm levels."*

The first change was made following release of a study that compared the changes in the CPI with the cost of the economy food plan. As Table B-1 suggests, general price increases were not uniformly matched by

Table B-1

COMPARISON OF CHANGES IN CONSUMER PRICE INDEX AND IN THE COST OF ECONOMY FOOD PLAN: 1959-1968

	Consumer Price Index		
Year	All Items	Food	Economy Food Plan
1968	113.6	113.5	108.7
1967	109.0	109.6	106.5
1966	106.0	108.7	106.5
1965	103.0	103.5	102.2
1964	101.3	101.2	100.0
1963	100.0	100.0	100.0
1962	98.8	98.6	97.8
1961	97.7	97.6	97.8
1960	96.6	96.5	100.0
1959	95.1	95.4	97.8

Source: U.S. Bureau of the Census, Current Population Reports, "Special Studies--Revision in Poverty Statistics, 1959 to 1968," Series P-23, No. 28 (August 12, 1969).

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*U.S. Bureau of the Census, Current Population Reports, P-60, No. 86, "Characteristics of the Low-Income Population, 1971," p. 17 (1972).

food increases. Between the years 1959 and 1966 the CPI increased by 13.7 percent while the poverty threshold increased by only 7.9 percent. The Review Committee also weighed the available evidence relating to farm families and concluded that 85 percent more clearly represented the differential between farm and non-farm families. (Table B-2 gives a sample breakdown for different family types following the Federal Interagency Committee's changes.)

Table B-2

WEIGHTED AVERAGE THRESHOLDS AT THE LOW-INCOME LEVEL IN 1971
BY SIZE OF FAMILY AND SEX OF HEAD, BY FARM-NONFARM RESIDENCE

		Nonfarm			Farm		
Size of Family	Total	Total	Male Head*	Female Head*	Total	Male Head*	Female Head*
All unrelated individuals	$2,033	$2,040	$2,136	$1,978	$1,727	$1,783	$1,669
Under 65 yr	2,093	2,098	2,181	2,017	1,805	1,853	1,715
65 and over	1,931	1,940	1,959	1,934	1,652	1,666	1,643
All families	3,700	3,724	3,764	3,428	3,235	3,242	3,079
2 persons	2,612	2,633	2,641	2,581	2,219	2,224	2,130
Head under 65	2,699	2,716	2,731	2,635	2,317	2,322	2,195
Head 65 and over	2,424	2,448	2,450	2,437	2,082	2,081	2,089
3 persons	3,207	3,229	3,246	3,127	2,745	2,749	2,627
4 persons	4,113	4,137	4,139	4,116	3,527	3,528	3,513
5 persons	4,845	4,880	4,884	4,837	4,159	4,159	4,148
6 persons	5,441	5,489	5,492	5,460	4,688	4,689	4,656
7 or more persons	6,678	6,751	6,771	6,583	5,736	5,749	5,510

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*For unrelated individuals, sex of the individual.

Source: U.S. Bureau of the Census, Current Population Reports, P-60, No. 86, "Characteristics of the Low-Income Population, 1971," p. 18 (1972).

Subsequent studies have charged that several flaws remain in the Orshansky index. The President's Commission on Income Maintenance Programs criticized the index as inadequate on the following grounds: (1) the Orshansky poverty index does not provide a nutritionally adequate diet because the Economy Food Plan was developed for "temporary or emergency use when funds are low," and (2) "the meal-planning, cooking, and shopping qualifications needed to reproduce the diet in an ordinary household are not characteristic of most low-income housewives."* The Commission also asserted that the one-third factor, whereby a family is not defined poor unless its income is less than three times its necessary food expenditures under the EFP, is in error. The one-third figure was based on the expenditure patterns of low income households of all sizes and therefore the level of expenditures resulting from this "multiplier method" may be too small to cover all the necessities.

As a replacement model, the President's Commission suggests use of a form of "The City Worker's Family Budget" developed by the Bureau of Labor Statistics for a number of areas in the United States. The Commission notes that although the City Worker's Budget is at a level too high for defining poverty ($8,000 to $9,000 for a family of four persons), it is an example of a refined use of the budget technique developed by the Social Security Administration because it costs out all the components necessary for an adequate living standard.

Another issue singled out by the President's Commission is what it calls "anomalous features" of the index. For example, the Orshansky index is lower for females than for males, presumably because single females eat less than single males. "If single women spend more for clothes than single males, the differences in poverty lines make no sense. Furthermore, the progression of weighted indices as family size increases bears little relation to anything known about family economies of scale."*

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*President's Commission, op. cit., p. 10.

By early 1973, a new government task force had been established to redefine poverty in order "to come up with a new, less politically loaded term to describe the nation's poor."† According to the Washington Post, the task force began with the assumption that the current count of 25 million poor under the Orshansky index exaggerated the seriousness of the problem because the current definition included only cash payments for determining income--and omitted noncash benefits such as food stamps or Medicare. A GAO report released by the Joint Economic Committee studied the impact of noncash benefits and concluded that their impact is "far greater and more complicated than most analysts had supposed." Included in these payments were "$2.1 billion in food stamp bonuses; $270 million in free food commodities; $65 million in child nutrition programs, and $1.9 billion in subsidized housing."†

In addition to such "under-measurements," the GAO study noted that while the current standard of $4,137 for a nonfarm family of four might be appropriate for a family in a small town, it would be insufficient for a family in a big city such as New York or Chicago. Furthermore, the GAO emphasized that it would stress neutral terms such as "low income" rather than "poverty" in defining minimum income levels.

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*Ibid., p. 29.

†William Chapman, "Definition of Poverty Studied," Washington Post, p. A-3, (March 31, 1973). "GAO Study of Poverty Discussed--Ed.", Washington Post, p. A-18, (April 12, 1973).

Appendix C

SIMULATION METHODOLOGY

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Appendix C

SIMULATION METHODOLOGY

Intrastate Analyses

Present Title I Distribution Criteria

To project the consequences of Title I dollar distribution changes, one must first understand the complicated structure under which funds were allocated until 1974. The first step in this process was, within each state, to determine the number of children in each county who qualified as "Title I Formula Children." Such children were "counted" in the following ways:

(1) They come from families whose annual incomes are under $2,000 as determined by the 1970 Census (for FY 1974 allocations) or (for allocations through FY 1973) by the 1960 Census.

(2) These "Census Children" are members of families who have annual incomes in excess of $2,000 but who are nevertheless sufficiently poor to qualify for state aid under Aid to Families with Dependent Children.*

(3) These "AFDC Children" are under state authority because they are neglected or delinquent.

(4) Children are residing in state supervised foster homes.

There are also categories for Title I funding for migrant children, and numerous other refinements further complicated the financial distribution of Title I funds.* In the main, however, the four categories above sufficed for an understanding of the changes in distributional criteria that would occur under the proposed switch to achievement test scores as a measure of disadvantage.

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*In some states where AFCD allocations are extraordinarily liberal, extending upward through substantially higher income classifications, a segment of AFDC children are included who come from families whose income is above the $2,000 level but who are among the "poorest" of the AFDC classifications.

The number of children in each category designated by the county as Title I Formula Children is then transmitted to the State Education Department, which sums these data and transmits the results to the U.S. Office of Education. Dollar amounts are then computed by USOE for each state and for each county within each state.

If a state's mean per pupil current operating expenditure is less than the national average, the federal government uses the national average per-pupil expenditure as a multiplier to determine the state's Title I grant. If a state is spending more, USOE uses the state's own average per-pupil expenditure when computing the Title I grant. Each state receives a dollar grant equal to the product of its total number of Title I Formula Children multiplied by the appropriate average per-pupil expenditure. County entitlements are determined in the same way: the appropriate (state or national) average per-pupil expenditure is multiplied by the total number of Title I Formula Children in the county. The resulting dollar amounts are termed the "Maximum Authorized Grant" for each political jurisdiction. However, since almost all schools are operated by individual districts, district Title I allocations must be calculated.

It is difficult to determine the number of neglected, delinquent, and foster children residing in a school district, because these children are supervised by county agencies. Therefore, in most states, district allocations exclude children in these categories. Numbers of Census and AFDC children are determined for each district in a county. Then the sum is found of all such children living in the county. After deducting expenses for Title I Formula Children attending county-administered schools, remaining dollars in the county Title I Maximum Authorized Grant are divided by the total number of Census and AFDC children residing in all districts of the county. This results in a figure which represents the county's dollar amount for each Title I Formula Child attending school in a district. This per-pupil dollar figure is subsequently multiplied by the number of AFDC and Census children residing in each district to determine the number of dollars provided to each district for its Title I programs.* This is the district's Maximum Authorized Grant.

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* For example, special incentive grants, which are related to the "national effort index," and the "state effort index."

In order to fund the Title I program fully, Congress would have to authorize the number of actual dollars determined by these calculations. To date, however, the legislative branch has declined to provide funding at this level. Therefore, after Maximum Authorized Grants are determined, each of them is multiplied by the fractional part of the total funding provided by the Congressional appropriation in order to identify the actual number of dollars a district will receive. If, as in FY 1973, the Maximum Authorized Grant totalled $4.038 billion, and only $1.316 billion was appropriated by Congress, then each district, county, and state in the United States actually received only 1316/4038 (or approximately 32.5 percent) of its Maximum Authorized Grant. This final dollar figure is termed the "Ratably Reduced Amount."

This study attempts to circumvent the less than full funding problem by determining changes in the number of eligible children, rather than precise dollar amounts, under the various allocation criteria. Where we do project changes in dollar amounts under the present and the proposed schemes, we use Ratably Reduced Amount figures as the base.

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*The total number of Title I Formula Children is larger than the number of AFDC and Census children, as has been described. However, the difference is small: in California, the total number of Title I Formula Children in FY 1973 was 796,690 and of AFDC and Census Children, 767,565. The AFDC and Census figure is 96.34 percent of the total number of Title I Formula Children.

What Test?

For the within-state allocation simulations, the criteria used were reading achievement tests administered to all children of one grade at one testing period. Each of these tests or modifications of them had been included in the Anchor test standardization effort (discussed later in Interstate Analyses).

Beyond selection of the test instrument, a determination was made as to which children in each state our study would use. Normally, state testing programs include children in several grades. Since information for the Anchor Test Study (ATS) used children tested in the 4th, 5th, and 6th grades, our simulation also chose reading tests given to children in those grades. In order to qualify for inclusion in the within-state analysis, a state must have tested all children in its 4th, 5th, or 6th grade. (The term "all children" means that all children in attendance at the school the day the test was given were tested, except for special categories of children such as educationally handicapped or bilingual.)

Defining Disadvantaged

The last major decision to be made for our intrastate analyses was the definition of the term "educationally disadvantaged." As described above, educationally disadvantaged under the present Title I formulation means a child whose parents are poor. Many educators disagree with that definition, however, pointing to the imperfect correlation between poverty and achievement.[*] However, there is little consensus on what proportion of the children should be termed "educationally disadvantaged" in the event that test scores are used as the criterion. An arbitrary cutoff point must be selected, and all children scoring below must be classified as "educationally disadvantaged." The selection of this cutoff point is likely to be the focus of sizable and recurring argument. Therefore, our analyses attempt to provide answers for persons holding different points of view.

Analysis #1

We assumed initially that the number of educationally disadvantaged under the original poverty criterion is the number of children we wish to label educationally disadvantaged under a newly inaugurated test score criterion. The percentage of children in each state who qualify today as Title I Formula Children is found by dividing the total number of Title I Formula Children by the total state enrollment. This percentage is the one we desire to include under our new formulation. Therefore, the percentile cutoff point on the criterion test is selected to coincide with the percentage of Title I Formula Children now living in the state.

After converting the percentile cutoff point to a raw score, the number of children in each district who score below the cutoff point is calculated and the results summed to give the total number of students who scored below the percentile cutoff point in the entire state. Dividing the number of children scoring below the cutoff point in each district by the total number in that classification in the state yields the proportion of children in this classification for the entire state who fall into each district.

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[*] For added discussion of this point, see John A. Emrick, "An Analysis of Proposals to Target ESEA Title I Support Based on Test Score Criteria," Stanford Research Institute, Menlo Park, California, (October 1973).

The same procedure is used to identify the proportion of Title I allocations now granted to each district: the number of AFDC and Census children living in each district is divided by the total number of AFDC and Census children for all districts. This number represents the district's share of Title I Formula Children.*

Now that the district's share of the current number of AFDC and Census children and its share of the number of low-scoring children have been determined, the larger of the two numbers is subtracted from the smaller number. The difference between them, when divided by the district's share of AFDC and Census children, represents the change resulting from a switch to test score criteria, if the number of educationally disadvantaged children is the same as the proportion of Title I Formula Children currently in the state. This number, when multiplied by 100, reveals the percentage change in the district's share of children (and funds). Districts are then grouped by the magnitude of the percent change they would experience under the proposed new criterion.

Analysis #2

The foregoing analyses reveal shifts that would occur within a state if it were desired to set the number of educationally disadvantaged children as closely as possible to the current number of children classified as poor. However, those wishing to use test score criteria as the definition of educationally disadvantaged differ about the proportion of children who are currently in need of compensatory education. For this reason, an analysis is also performed for test score percentile cutoff points of 10, 15, 20, 25, 30, and 35. This displays the manner in which the distribution changes when ever-increasing levels of test performance are chosen as criteria for defining the educationally disadvantaged.

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* It must be remembered at this point that this fraction does not represent precisely each district's share of Title I Funds, because county allocations are based upon the number of neglected, delinquent, and foster children as well. As discussed above, the number of dollars allocated to each district for each of its AFDC and Census children differs by county. Therefore, our fractional share for each district is only an approximation, albeit an approximation remarkably close to the actual fractional share of Title I dollars.

Providing a district-by-district analysis of these possibilities results in a cumbersome array of numbers (for California, over 8,000); therefore we present comparison data in the following fashion.

Districts have been sorted into categories according to the proportion of AFDC or Census children in their enrollment (0-5, 5+ - 10, 10+ - 15, 15+ - 20, 20+ - 25 percent, and so on). The total number of children scoring in each of the test score percentile cutoff distributions was found for each of the percentile groupings. Summing the numbers for each of the groupings reveals the number of students in the entire state scoring at this level. Determination of the proportion of the total state AFDC and Census Children falling into each grouping was computed in the manner used in the earlier analysis.

Finally, subtracting the new portion of students in each test score percentile cutoff point from the proportion of AFDC and Census Children falling into each of the groupings, dividing by the proportion of AFDC and Census Children falling into each grouping, and then multiplying the resulting fraction by 100 yields the percent change in the proportion of the state's children (and of state funds) flowing to each district under the particular criterion cutoff point.

Note

A special technique was introduced to resolve the problem of reallocation of children in secondary (high school) districts. Since the test score criteria is based on tests given to 4th, 5th, or 6th graders, no district scores are available in these secondary districts. For states containing some secondary, some elementary, and some unified (K-12) districts, a special technique is needed to resolve the problem of reallocation of children via test score criteria in secondary districts. For states with all three types of districts, it is necessary to "nest" the elementary districts into the secondary districts. In other words, each secondary district included its own enrollment, its own Title I Formula Children figure, and the sum of the test scores in each percentile cutoff point for all of its "feeder" elementary districts.

There were other problems. Despite statutes requiring each district to test the required grade, some school districts report no test results. In California, 36 districts reported no 1973 test score figures. These districts--whose enrollment totalled 33,883 and AFDC and Census counts totalled 5,138--were not included in the analysis. Similarly several large districts in Iowa could not be included because test results were unavailable. There were a few other school districts in several states that could not be included for other statistical reasons.

Interstate Analyses

The Anchor Test

If test scores were used as a distribution criterion instead of poverty levels, would some states receive a greater proportion of the total national Title I appropriation and some a smaller proportion than is now the case? The answer to this question requires a suitable instrument to compare the results of statewide testing programs. Publishers' norms cannot themselves be used for this purpose owing to variations in the sample upon which such norms are based. The problem is complicated, particularly in the instance of reading ability tests, by the large variety and number of standardized tests in use by states. Fortunately, however, the problem of noncomparability has been resolved, at least partially, through the Anchor Test Study (ATS). In April 1972, the Educational Testing Service collected data on seven reading tests over a meticulously selected national sample of 4th, 5th, and 6th graders. The individual tests, together with their specific forms and levels, are presented in Table C-1.*

For all its usefulness, the Anchor Test Study was not able to solve the noncomparability problem completely. For example, the Anchor Study was conducted in the spring, and corresponding results for fall and winter (in the case of fall, winter, spring tables) or for fall (in the case of fall, spring tables) are not available.

Furthermore, states frequently did not use the same test form as employed by the Anchor standardization effort. Not all states that have statewide testing conduct such tests in the 4th, 5th, or 6th grade. The problem is further compounded by the fact that there are several states (for example, New York and Delaware) which have highly developed testing programs, but employ their own tests. Such tests, of course, are normed on standards for the particular state in question and cannot be used in an interstate comparison. For these and other more technical reasons, our interstate simulations are not flawless and must be interpreted in light of such limitations.

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*To include as many states in the interstate analysis as possible, two diviations from our practice of using 4th, 5th, and 6th grade test results were permitted. First, the state of Arizona, which tests its 3rd grade children using the Metropolitan Achievement Test, and the State of Arkansas, which administers the SRA Achievement to its 8th graders, were included. Second, several states (New Hampshire, Arkansas, and Mississippi) which tested only a portion of the children in the criterion grade were included in the interstate analysis. These last-mentioned states do not select test districts in a systematic manner.

Table C-1

TEST EDITIONS, LEVELS, AND FORMS USED IN THE 1972 ANCHOR TEST STUDY DATA COLLECTION

Test Edition	Abbreviated Test Title	Publisher	Form	Level Used at Grade: 4	5	6
Calif. Achievement Tests (1970 ed.)	CAT	CTB/McGraw-Hill	A	3	3	4
Comprehensive Tests of Basic Skills (1968 ed.)	CTBS	CTB/McGraw-Hill	Q	2	2	3
Iowa Tests of Basic Skills (1971 ed.)	ITBS	Houghton Mifflin	5	10	11	12
Metropolitan Achievement Tests (1970 ed.)	MAT	Harcourt Brace Jovanovich	F	Elementary		
Sequential Tests of Educational Progress, STEP Series II (1969 ed.)	STEP II	Educational Testing Service	A	4	4	4
SRA Achievement Series (1971 ed.)	SRA	Science Research Associates	E	Blue Edition	Blue Edition	Green Edition
Stanford Achievement Tests (1964 ed.)	SAT	Harcourt Brace Jovanovich	W	Intermediate	Intermediate	Intermediate

Source: Education Testing Service, Equivalency and Norms Tables for Selected Standardized Reading Achievement Tests, Grades 4, 5 and 6, unofficial version. Peter G. Loret, Project Director, Educational Testing Service, Berkeley, California (August 1973).

Analytic Assumptions

Two major assumptions undergird our interstate analyses. The first is that, in those instances in which a state's testing programs utilized a sample of students, the scores from such an endeavor can be generalized to all students in that grade level throughout the state. The second assumption is that the proportions or distribution of student test scores in the grade or grades tested held for all grades (1st through 12th) in the state.

Our use of the Anchor Test Study necessitated a further set of assumptions. There are differences between the ATS percentiles of 10, 15, 20, 25, 30 and 35 and the publisher's equivalent percentiles. For example, it might be that for spring testing of 6th graders, the ATS 10th percentile corresponds to the publishers' 9th. It is necessary to assume that the difference between the ATS and the publishers' norms for the level, grade, form, and season tested in each state is the same as the difference would be if the norming had been done by the ATS using the same level, form, grade, and season the state used. (This assumption does not, of course, need to be made where the grade, level, form and calendar season are the same for the ATS and the state; but this was true only in the cases of Mississippi and New Mexico.) In cases where the norming was imperfectly done, such an assumption is of heroic proportions. It was hoped that it would be possible to exclude states that did not fit the precise criteria of the Anchor Test Study. However, it eventually became obvious that such a rigorous stance would eliminate the possibility of conducting simulations.

Comparative Procedures

Title I disbursements are based on "old" data. Normally, during the winter of the year preceding allocation, a census is taken in each state, county, and school district, of the number of children who are Title I eligible. Our simulations make comparisons between test scores derived during the year students are counted for Title I (i.e., the year preceding actual dollar allocations). In FY 1974, 6,247,105 children nationwide qualified as Title I Formula Children, according to data supplied by the USOE Title I Washington office. In the school year 1972-73, there were 42,277,382 children enrolled in U.S. school districts.* Thus, for 1972-73, the number of children qualifying as Title I eligible is almost 15 percent of the total U.S. enrollment.†

If, under any statutory change to test score allocations, the same number of children were to be included in the Title I program as is now the case, the proper cutoff point is the Anchor Test 15th percentile. However, it is also desirable to know whether or not states would gain or lose Title I funds if the cutoff point were set at other test score levels throughout the low-achieving range. Thus, the ATS 10th, 20th, 25th, 30th, and 35th percentile cutoff points were also used for simulation purposes.

It was necessary to employ several methods to determine the number of children in each of the target states scoring below each percentile cutoff point. Detailed descriptions of these procedures are included in Appendix D. Basically, however, the raw score for each state test percentile cutoff point (corresponding to the ATS percentiles of 10, 15, 20, 25, 30, and 35) was determined. Then, from a frequency distribution of state test scores, we computed the proportion of children scoring below the ATS percentile cutoff. This proportion was multiplied by the 1972-73 ADA for the state as given by the NEA Estimates of School Statistics.

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*NEA Estimates of School Statistics, p. 27 (1973).

†It is interesting to note that the precise percentage, 14.528, constitutes a decline from FY 1973, in which the percentage of Title I eligible students was 15.669. This decline represents (1) a shift caused by changing to the 1970 Census data for allocation purposes, instead of the antiquated 1960 data; and (2) the obsolescence of the 1965-enacted $2,000 annual income criterion as an index of today's poverty.

Finally, we assumed in each case that the national total number of Title I dollars remained constant, and thus the funds would shift among states.

Analyses of Alternative Poverty Criteria

The methodology used in these analyses was identical to that in the Intrastate Analyses. Figures were obtained for the number of children from families classified as poor by the Orshansky definition, and for the number of children from families with 1970 Census income levels below $3,000, $4,000, $5,000 and $6,000. These figures were substituted for the Title I figures in the previous analyses in order to project funding shifts under the chosen indices of poverty.

There were two weaknesses with the data file utilized. Only districts with enrollments of 300 or more were included. Furthermore, the 300 figure was not firm, and in some instances the enrollments were larger or smaller. To circumvent this difficulty, it was decided in districts where no alternative poverty numbers were available, to multiply the Title I eligibility figure by the national proportion of alternative poverty children. For example, since there were 6,247,105 FY '74 Title I children in the United States and 7,700,368 children defined as "poor" under the Orshansky formula, the final Orshanksy figure was obtained by multiplying the Title I figure by 1.2326 to take into account districts where no Orshanksy figure was available.

In addition, the number of Orshansky children listed is the number between ages 5 and 17 who live within the boundaries of the district. Thus, where there were both elementary and secondary districts, as in California, students were counted twice. This problem was resolved by multiplying the figure for all elementary districts by 0.6017, the proportion of elementary children enrolled in California school districts, and by 0.3983, the proportion of secondary children.

Six new formulas (see Table C-2) were developed and simulations run to determine the effects on six states. These formula simulations differ in one important respect from our earlier analyses: they project funding on the assumption that more dollars will be forthcoming and that the increase in funding will be proportional to the number of children added to the present Title I Formula Children. In other words, our simulations project the percent increase in eligible children. It is assumed that this increase will correspond with the percentage increase in funding.

Double-Count Simulations

In Simulations V and VI (which are double-counts of Simulations I and II), the number of children is defined as the total of estimated academically deficient children plus the poverty children. In Double-Count Simulation V, I (Simulation V) poverty children reflect present Title I counting methods and in double-count Simulation VI, II (Simulation VI) they are defined according to the Orshansky index.

Several technical decisions had to be made to deal with the data on individual states. The most burdensome are presented below.

Iowa

Figures for counts of AFDC, Census, and Neglected and Delinquent children given us from the state of Iowa differ from those released by the U.S. Office of Education. Iowa counts are based on Iowa state income tax returns rather than on the 1970 Census. The differences would not pose

Table C-2

CRITERIA UTILIZED IN SIMULATIONS OF FOUR NEW FORMULAS

Simulation	Old Measure	New Measure
I	Present Title I Formula Children	Maximum number of present Title I Formula Children and number of academically deficient children.
II	Orshansky poverty index children	Maximum of number of Orshansky poverty index children and number of academically deficient children.
III	Present Title I Formula Children	If number of Title I Formula Children is less than 16%, use present Title I Formula Children. If greater than 16%, use maximum of number of Title I Formula Children and academically deficient children.
IV	Orshansky poverty index children	If number of Orshansky index children is less than 16%, use this number. If greater than 16%, use maximum of number of Orshansky index children and academically deficient children.
V	Present Title I Formula Children	Sum of present Title I Formula Children and academically deficient children.
VI	Orshansky Poverty index children	Sum of Orshansky poverty index children and academically deficient children.

problems except that the total number of children is startlingly different. Here are the U.S. Office of Education state totals.

1970 Census	AFDC	Other	Total
22,459	27,315	2,937	52,711

The Iowa state totals are:

1971 Iowa Income Tax	AFDC Plus Foster	Other	Total
63,827	32,818	234	96,879

In our simulations, the totals for Iowa have less meaning since the AFDC counts are inflated to begin with. Percentage increases related to a population of 96,879 are much smaller than they would be if related to the population of 52,711--the number of children upon which funding is based. The AFDC/Census count is utilized in simulations I, III, and V. Thus the shifts projected for these simulations are artificially small.

Delaware

As previously noted, Delaware utilizes a test that cannot be equated to national norms. For this reason it should not, strictly speaking, be included in these simulations that estimate the number of children residing in the state who score in the bottom 16 percent nationally. However, for purposes of illustration it was decided to include Delaware. It was assumed that the low-scoring population within the state was 16 percent of the state, i.e., the same as the proportion of academically deficient children in the national population.

Massachusetts

Persistent problems were encountered in the Massachusetts data. Most particularly, it was not possible to obtain a frequency distribution for the state's 4th grade testing program. Thus the number of children scoring in the bottom 16 percent nationally had to be estimated using only a mean and standard deviation. The resulting figure, totaling only 6 percent of the state's children, was so small that it was felt the distribution of scores for the state testing program was probably not normal in form. Nevertheless, inasmuch as Massachusetts is an important state from the point of view of size, we decided to utilize the figures in this analysis.

Simulations I and II

The first simulation takes things as they are today, utilizing the present definitions of poverty stemming from Census and AFDC counts. The number of children scoring in the bottom 16 percent of the state reading test is estimated for each district. This figure represents the estimated number of educationally disadvantaged children in the schools of the state. The new "Title I Formula Children" figure for Simulation I is the larger of these two figures. The percent change for the district is figured by the formula

$$C = \frac{N_i - O_i}{O_i} \times 100$$

where

C = percent change

N_i = number of new Title I Formula Children in District i

O_i = number of "old" (i.e., present) Title I Formula Children in District i.

Percent changes for the entire state are calculated the same way.

For Simulation II, the procedure is identical except that the "old" Title I Formula Children figure is the 1970 Census determination of the number of Orshansky index children residing in the district. In other words, the simulation measures the shifts from Orshansky index allocations to allocations based on the greater of the number of Orshansky and of educationally disadvantaged children residing in the district. These results are presented in the same form as for Simulation I.

Simulations III and IV

These analyses are identical to Simulations I and II (III corresponding to I and IV corresponding to II) except that only if the number of academically deficient children exceeds the national average of 16 percent is the district allowed to choose the larger of the two measures. In other words, if a district has 13 percent academically deficient children and 10 percent poor children, it cannot use the academically deficient number in Simulations III and IV. The changes in the number and percentage of eligible children will be correspondingly smaller.

Simulations II and IV vary slightly in numbers of districts (and children) in each category from the earlier Orshansky-test score simulations. These variations are due to different methods of estimating Orshansky populations when no figures were available. The earlier method multiplies the AFDC count by the national ratio of Orshansky/Title I children. This simulation substitutes state ratios, since it was decided they yield a more precise estimate of the number of Orshansky children residing in the district.

Appendix D

SIMULATION RESULTS

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Appendix D

SIMULATION RESULTS

The tables of results in this appendix are grouped as shown below.

Intrastate Shifts in Funding	Tables
By Numbers and Enrollments of Districts	
Alabama	D-1 to D-3
Delaware	D-4 to D-6 (and note)
Hawaii	D-7 to D-9
Iowa	D-10 to D-12
Massachusetts	D-13 to D-15
Michigan	D-16
New Mexico	D-17 to D-19 (and note)
New York	(note only)
By Type (Urban/Rural) and Ethnic Minorities of Districts	
California	D-20 to D-23
Alabama	D-24
Interstate Analyses of Achievement Test Scores*	
Alabama	D-25
Arkansas	D-26
Arizona	D-27
California	D-28
Delaware	(note only)
Hawaii	D-29
Iowa	D-30
Massachusetts	(note only)

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*Notes relating to each state follow each table.

Interstate Analyses of Achievement Test Scores (Continued)

	Tables
Mississippi	D-31
New Hampshire	D-32
New Mexico	D-33
North Carolina	D-34
North Dakota	D-35
Rhode Island	D-36
Tennessee	D-37

Interstate Comparisons Using Alternative (Orshansky Index or Family Annual Income) Poverty Criteria

Percentage Changes in Number of Children

Alabama	D-38 to D-42
California	D-43 to D-47
Delaware	D-48 to D-52
Iowa	D-53 to D-57
New Mexico	D-58 to D-62

Absolute Number of Children

Alabama	D-63 to D-67
California	D-68 to D-72
Delaware	D-73 to D-77
Iowa	D-78 to D-82
Massachusetts	D-83 to D-87
New Mexico	D-88 to D-92

Percentage of Children

Alabama	D-93 to D-97
California	D-98 to D-102
Delaware	D-103 to D-107
Iowa	D-108 to D-112
Massachusetts	D-113 to D-117
New Mexico	D-118 to D-122

Interstate Comparisons Using Alternative (Orshansky Index or Family Annual Income) Poverty Criteria (Continued)

Tables

Interstate Shifts, by Region

Rocky Mountains D-123
Great Lakes D-124
Mideast D-125
New England D-126
Pacific D-127
Plains D-128
Southeast D-129
Southwest D-130

Double-Count, Simulation I D-131 to D-136

Double-Count, Simulation II D137 to D-142

Simulations I, II, III, and IV

Alabama D-143 to D-146
California D-147 to D-150
Delaware D-151 to D-154
Iowa D-155 to D-158
Massachusetts D-159 to D-162
New Mexico D-163 to D-166

Table D-1

ALABAMA

PROPORTIONAL DIFFERENCES IN FUNDING BETWEEN ACHIEVEMENT AND POVERTY ALLOCATIONS

Pct. of Children in District Now Qualifying for Title I Funds	No. of Districts	Total Enrollment	Pct. of Title I Funds	Percentile Cutoffs Defining Low Achievers					
				10 Pctl. Share	15 Pctl. Share	20 Pctl. Share	25 Pctl. Share	30 Pctl. Share	35 Pctl. Share
0-5%	7	18,746	.58%	.40%	.53%	.59%	.68%	.74%	.78%
5-10%	48	316,320	23.66%	27.12%	28.74%	29.42%	29.96%	30.61%	31.30%
10-15%	36	224,683	26.65%	26.86%	27.10%	27.17%	27.65%	27.74%	27.99%
15-20%	14	162,735	25.49%	26.64%	25.98%	25.74%	25.36%	25.02%	24.54%
20-25%	7	33,280	7.42%	7.10%	6.56%	6.34%	6.14%	6.00%	5.93%
25-30%	5	18,683	4.84%	3.45%	3.52%	3.52%	3.43%	3.38%	3.29%
30-35%	2	11,253	3.70%	2.38%	2.19%	2.11%	2.09%	2.07%	2.07%
Over 35%	6	19,332	7.65%	6.03%	5.38%	5.11%	4.70%	4.44%	4.11%

Table D-2

ALABAMA

PERCENT CHANGES IN FUNDING BETWEEN ACHIEVEMENT AND POVERTY ALLOCATIONS

			Percentile Cutoffs Defining Low Achievers					
Dist. Poverty Range	N Dists.	Total Enrollment	10 Pctl. % Change	15 Pctl. % Change	20 Pctl. % Change	25 Pctl. % Change	30 Pctl. % Change	35 Pctl. % Change
0-5%	7	18,746	- 30.60%	- 8.13%	- 2.00%	+ 16.60%	+ 27.44%	+ 34.08%
5-10%	48	316,320	+ 14.64%	+ 21.47%	+ 24.33%	+ 26.63%	+ 29.37%	+ 32.27%
10-15%	36	224,683	+ .81%	+ 1.71%	+ 1.97%	+ 3.75%	+ 4.10%	+ 5.04%
15-20%	14	162,735	+ 4.49%	+ 1.91%	+ .97%	- .54%	- 1.85%	- 3.76%
20-25%	7	33,280	- 4.29%	- 11.61%	- 14.63%	- 17.31%	- 19.15%	- 20.13%
25-30%	5	18,683	- 28.76%	- 27.41%	- 27.27%	- 29.16%	- 30.24%	- 32.02%
30-35%	2	11,253	- 35.59%	- 40.85%	- 42.87%	- 43.50%	- 43.90%	- 43.97%
35 +	6	19,332	- 21.16%	- 29.71%	- 33.30%	- 38.61%	- 42.05%	- 46.36%

Table D-3

ALABAMA

PERCENT CHANGE IN DISTRICTS BETWEEN ALLOCATION BASED ON AFDC AND CENSUS CHILDREN AND ALLOCATION BASED ON 18th PERCENTILE CUTOFF CRITERION

Percent Change	No. of Districts	Total Enrollment	Average Size of District
-100% to -75%	5	10,805	2,161
- 75% to -50%	13	40,154	3,089
- 50% to -25%	26	114,231	4,394
- 25% to 0	30	202,281	6,743
0 to 25%	23	183,465	7,977
25% to 50%	10	156,291	15,629
50% to 75%	7	43,989	6,284
75% to 100%	5	27,113	5,423
100% to 125%	1	2,550	2,550
125% to 150%	1	9,876	9,876
150% to 175%	1	3,259	3,259
175% to 200%	2	6,048	3,024
200% to 225%	0	--	--
225% to 250%	0	--	--
250% to 275%	0	--	--
275% to 300%	1	4,968	4,968
300% to 325%	0	--	--
325% to 350%	0	--	--
350% to 375%	0	--	--
Over 375%	0	--	--

Table D-4

DELAWARE

PROPORTIONAL DIFFERENCES IN FUNDING BETWEEN ACHIEVEMENT AND POVERTY ALLOCATIONS

Percent of Children in district now qualifying for Title I funds	No. of Dists.	Total Enrollment	Share Under AFDC criteria	Share Under 10 Pctl.	Share Under 15 Pctl.	Share Under 20 Pctl.	Share Under 25 Pctl.	Share Under 30 Pctl.	Share Under 35 Pctl.
0-5	12	84,339	.2054	.3418	.3535	.3664	.4096	.4210	.4440
5-10	8	26,177	.3108	.2698	.2808	.2824	.2695	.2676	.2610
10-15	1	6,635	.0966	.0831	.0799	.0764	.0714	.0693	.0684
15-20	1	15,129	.3861	.3044	.2853	.2735	.2493	.2419	.2264

Table D-5

DELAWARE

PERCENT CHANGES IN FUNDING BETWEEN ACHIEVEMENT AND POVERTY ALLOCATIONS

Percent of Children in district now Qualifying for Title Ifunds	No. of Districts	Enrollment	10 Pctl.	15 Pctl.	20 Pctl.	25 Pctl	30 Pctl	35 Pct.
0-5	12	84,339	66.40	72.10	78.38	99.41	104.96	116.16
5-10	8	26,177	-13.19	-9.65	-9.13	-13.28	-13.89	-16.02
10-15	1	6,635	-13.97	-17.28	-20.91	-26.08	-28.26	-29.19
15-20	1	15,129	-21.16	-26.10	-29.16	-35.43	-37.34	-41.36

Table D-6

DELAWARE

PERCENTAGE SHIFT IN FUNDS, BY DISTRICT, WHEN CRITERIA FOR PARTICIPATION IN TITLE I PROGRAMS IS SHIFTED FROM POVERTY TO 5th PERCENTILE ON DELAWARE EDUCATIONAL ASSESSMENT PROGRAM TREST.

Shift in Funds	No. of Districts	Enrollment	Average Size of District
-100% to -75%			
-75% to -50%	2	6,215	3,108
-50% to -25%	5	15,608	3,122
-25% to 0	6	38,803	6,467
0 to 25%	3	16,087	5,362
25% to 50%	1	8,046	8,046
50% to 75%	1	5,621	5,621
75% to 100%	1	6,900	6,900
100% to 125%	1	4,172	4,172
125% to 150%	0		
150% to 175%	0		
175% to 200%	1	3,313	3,313
200% to 225%			
225% to 250%			
250% to 275%			
275% to 300%			
300% to 325%			
325% to 350%			
350% to 375%			
Over 375%	2	27,515	13,758

Note on Delaware Simulation

In a conversation with Dr. William I. Corkle, Supervisor, ESEA. Title I Management and Operations, Delaware Department of Public Instruction, it was revealed that the Delaware figures include only AFDC counts--the low-income figures from Census data are not included.

The AFDC count is based on figures supplied to his office by the State Welfare Department which were collected in the autumn of 1971.

Table D-7

HAWAII

PROPORTIONAL DIFFERENCES IN FUNDING BETWEEN ACHIEVEMENT AND POVERTY ALLOCATIONS

Pct. of children now qualifying for Title I funds	No. of Districts	Total Enroll-ment	Share Under AFDC Criteria		Percentile Cutoffs defining low achievers					
					10 Pctl. Share	15 Pctl. Share	20 Pctl. Share	25 Pctl. Share	30 Pctl. Share	35 Pctl. Share
0-5%	0									
5-10%	3	53,588	17.28		29.12	29.42	29.59	29.83	29.86	29.98
10-15%	2	43,861	24.18		26.25	25.59	25.15	24.92	24.65	24.50
15-20%	2	83,545	58.54		44.63	44.99	45.25	45.25	45.50	45.52
20-25%										
25-30%										
30-35%										
Over 35%										

Table D-9

HAWAII

PERCENT CHANGES IN FUNDING BETWEEN ACHIEVEMENT AND POVERTY ALLOCATIONS

Dist. Poverty Range	N. Districts	Total Enrollment	Percentile Cutoffs defining low achievers					
			10 Pctl. % Change	15 Pctl. % Change	20 Pctl. % Change	25 Pctl. % Change	30 Pctl. % Change	35 Pctl. % Change
0-5%	0							
5-10%	3	53,588	68.53%	70.28%	71.26%	72.65%	72.77%	73.50%
10-15%	2	43,861	8.56%	5.82%	4.01%	3.04%	1.91%	1.29%
15-20%	2	83,545	-23.76%	-23.15%	-22.69%	-22.70%	-22.27%	-22.23%
20-25%	0							
25-30%	0							
30-35%	0							
35+	0							

Table D-9

HAWAII

PERCENT CHANGE IN DISTRICTS BETWEEN ALLOCATION BASED ON AFDC AND CENSUS CHILDREN AND ALLOCATION BASED ON 18th PERCENTILES CUTOFF CRITERION

Percent Change	No. of Districts	Total Enrollment
-100% to -75%	-	
-75% to -50%	-	
-50% to -25%	1	50,125
-25% to 0	2	59,602
0 to 25%	1	17,479
25% to 50%	-	
50% to 75%	2	45,728
75% to 100%	1	7,860
100% to 125%		
125% to 150%		
150% to 175%		
175% to 200%		
200% to 225%		
225% to 250%		
250% to 275%		
275% to 300%		
300% to 325%		
325% to 350%		
350% to 375%		
Over 375%		

Table D-10

IOWA

PROPORTIONAL DIFFERENCES IN FUNDING BETWEEN ACHIEVEMENT AND POVERTY ALLOCATIONS

Pct. of children in district now qualifying for Title 1 funds	No. of districts	Total Enrollment	Share Under AFDC Criteria	Percentile cutoffs defining low Achievers					
				10 Pctl. Share	15 Pctl. Share	20 Pctl. Share	25 Pctl. Share	30 Pctl. Share	35 Pctl. Share
0-5%	3	7,125	.38%	1.10%	1.12%	1.18%	1.14%	1.19%	1.22%
5-10%	41	55,235	5.04%	9.08%	8.94%	9.09%	9.11%	9.42%	9.55%
10-15%	154	194,116	30.47%	33.57%	34.15%	35.03%	35.13%	35.40%	35.93%
15-20%	149	58,405	37.30%	31.22%	31.49%	30.55%	31.95%	32.09%	32.29%
20-25%	45	90,203	22.66%	22.71%	22.11%	21.91%	20.50%	19.77%	18.88%
25-30%	9	9,097	2.89%	1.82%	1.67%	1.65%	1.57%	1.55%	1.56%
30-35%	2	1,327	.51%	.16%	.20%	.25%	.25%	.25%	.25%
Over 35	2	1,666	.74%	.33%	.32%	.34%	.35%	.33%	.32%

Table D-11

IOWA

PERCENT CHANGES IN FUNDING BETWEEN ACHIEVEMENT AND POVERTY ALLOCATIONS

Dist. Poverty Range	No. Dists.	Total Enroll-ment	Percentile cutoffs defining low Achievers					
			10 Pctl. % Change	15 Pctl. % Change	20 Pctl. % Change	25 Pctl. % Change	30 Pctl. % Change	35 Pctl. % Chang
0-5%	3	7,125	+192%	+196%	+212%	+201%	+215%	+224%
5-10%	41	55,235	+80%	+78%	+81%	+81%	+87%	+90%
10-15%	154	194,116	+10%	+12%	+15%	+15%	+16%	+18%
15-20%	149	58,405	-16%	-16%	-18%	-14%	-14%	-13%
20-25%	45	90,203	0	-2%	-3%	-10%	-13%	-17%
25-30%	9	9,097	-37%	-42%	-43%	-46%	-46%	-46%
30-35%	2	1,327	-69%	-62%	-50%	-50%	-51%	-52%
35+	2	1,666	-55%	-57%	-55%	-53%	-56%	-57%

Table D-12

IOWA

PERCENT CHANGE IN DISTRICTS BETWEEN ALLOCATION BASED ON AFDC AND CENSUS CHILDREN AND ALLOCATION BASED ON 18TH PERCENTILE CUTOFF CRITERION

Percent Change	No. of Districts	Total Enrollment	Average Size of District
-100% to -75%	48	26,045	543
-75% to -50%	81	65,988	815
-50% to -25%	86	92,172	1,072
-25% to 0	59	97,899	1,659
0 to 25%	49	83,140	1,697
25% to 50%	27	70,057	2,595
50% to 75%	18	51,633	2,869
75% to 100%	12	8,079	673
100% to 125%	7	11,325	1,618
125% to 150%	7	19,527	2,790
150% to 175%	4	7,807	1,952
175% to 200%	2	3,940	1,970
200% to 225%	0	--	--
225% to 250%	1	1,375	1,375
250% to 275%	0	--	--
275% to 300%	1	1,514	1,514
300% to 325%	1	355	355
325% to 350%	0	--	--
350% to 375%	0	--	--
Over 375%	2	900	450

Table D-13

MASSACHUSETTS

PROPORTIONAL DIFFERENCES IN FUNDING BETWEEN ACHIEVEMENT AND POVERTY ALLOCATIONS

				Percentile Cutoffs Defining Low Achievers					
Pct. of Children in District Now Qualifying for Title I Funds	No. of Districts	Total Enrollment	Pct. of Title I Funds	10 Pctl. Share	15 Pctl. Share	20 Pctl. Share	25 Pctl. Share	30 Pctl. Share	35 Pctl. Share
0-5%	121	320,245	6.44%	17.35%	18.41%	19.08%	19.76%	20.13%	20.38%
5-10%	111	342,516	14.51%	24.97%	25.81%	26.33%	26.85%	27.14%	27.49%
10-15%	49	176,048	12.46%	15.27%	15.12%	15.14%	15.16%	15.20%	15.29%
15-20%	25	89,521	9.36%	8.94%	9.05%	8.99%	8.91%	8.83%	8.75%
20-25%	2	31,058	3.72%	3.27%	3.26%	3.20%	3.18%	3.13%	3.10%
25-30%	7	111,003	18.90%	14.58%	13.99%	13.52%	13.07%	12.85%	12.61%
30-35%	4	32,074	6.06%	3.95%	3.93%	3.82%	3.72%	3.67%	3.61%
Over 35%	1	96,808	28.55%	11.68%	10.43%	9.92%	9.34%	9.05%	8.78%

Table D-14

MASSACHUSETTS

PERCENT CHANGES IN FUNDING BETWEEN ACHIEVEMENT AND POVERTY ALLOCATIONS

Dist. Poverty Range	N Dists.	Total Enrollment	Percentile Cutoffs Defining Low Achievers					
			10 Pctl. % Change	15 Pctl. % Change	20 Pctl. % Change	25 Pctl. % Change	30 Pctl. % Change	35 Pctl. % Change
0-5%	121	320,245	+169.28%	+185.71%	+196.11%	+206.65%	+212.36%	+216.14%
5-10%	111	342,516	+ 72.05%	+ 77.82%	+ 81.44%	+ 85.03%	+ 87.00%	+ 89.39%
10-15%	49	176,048	+ 22.51%	+ 21.38%	+ 21.49%	+ 21.70%	+ 21.99%	+ 22.74%
15-20%	25	89,521	- 4.49%	- 3.35%	- 4.00%	- 4.76%	- 5.67%	- 6.50%
20-25%	2	31,058	- 12.15%	- 12.39%	- 14.02%	- 14.55%	- 15.94%	- 16.58%
25-30%	7	111,003	- 22.88%	- 26.00%	- 28.48%	- 30.85%	- 31.99%	- 33.30%
30-35%	4	32,074	- 34.77%	- 35.03%	- 36.89%	- 38.65%	- 39.41%	- 40.40%
35 +	1	96,808	- 59.09%	- 63.46%	- 65.24%	- 67.28%	- 68.29%	- 69.26%

Table D-15

MASSACHUSETTS

PERCENT CHANGE IN DISTRICTS BETWEEN ALLOCATION BASED ON AFDC AND CENSUS CHILDREN AND ALLOCATION BASED ON 18th PERCENTILE CUTOFF CRITERION

Percent Change	No. of Districts	Total Enrollment	Average Size of District
-100% to -75%	2	228	114
- 75% to - 50%	3	97,875	32,625
- 50% to - 25%	19	122,879	6,467
- 25% to 0	38	206,552	5,436
0 to 25%	31	103,979	3,354
25% to 50%	25	92,854	3,714
50% to 75%	34	116,780	3,435
75% to 100%	25	88,001	3,520
100% to 125%	20	68,352	3,418
125% to 150%	21	64,404	3,067
150% to 175%	12	41,788	3,482
175% to 200%	10	48,275	4,828
200% to 225%	7	30,453	4,350
225% to 250%	9	14,207	1,579
250% to 275%	8	22,225	2,778
275% to 300%	5	13,875	2,775
300% to 325%	10	29,981	2,998
325% to 350%	3	5,957	1,985
350% to 375%	3	3,597	1,199
Over 375%	35	27,011	772

Table D-16

MICHIGAN

PERCENTAGE DIFFERENCES IN FUNDING BETWEEN ACHIEVEMENT AND POVERTY ALLOCATIONS

		PERCENTILE CUT-OFF DEFINING THE LOW ACHIEVERS				
		1st Decile	2nd Decile	3rd Decile	4th Decile	5th Decile
District Poverty Range (%)	Number of Pupils	% Change From Poverty Allocation	% Change From Poverty Allocation	% Change From Poverty Allocation	% Change From Poverty Allocation	% Change From Poverty Allocation
0-5	784,345	42	67	86	102	117
5-10	790,075	0	6	11	15	18
10-15	293,476	-17	-19	-21	-22	-23
15-20	479,945	-1	-10	-17	-24	-29
20 +	459,000	-26	-36	-41	-45	-48

Table D-17

NEW MEXICO

PROPORTIONAL DIFFERENCES IN FUNDING BETWEEN ACHIEVEMENT AND POVERTY ALLOCATIONS

Pct. of children in district now qualifying for Title I funds	No. of districts	Total Enroll-ment	Share Under AFDC Criteria	Percentile cutoffs defining low achievers					
				10 Pctl. Share	15 Pctl. Share	20 Pctl. Share	25 Pct. Share	30 Pctl. Share	35 Pctl. Share
0-5%	12	7,787	.19	.92	1.05	1.10	1.19	1.19	1.24
5-10%	13	32,452	6.87	7.95	8.79	9.20	10.00	10.27	10.87
10-15%	20	146,944	47.13	48.05	47.64	48.27	48.36	48.39	48.34
15-20%	14	41,345	19.12	15.80	15.98	15.75	15.48	15.89	16.21
20-25%	7	10,831	6.40	3.68	4.32	4.63	4.66	4.70	4.68
25-30%	6	4,542	3.39	3.35	3.27	3.34	3.33	3.24	3.15
30-35%	4	16,392	13.61	18.29	17.21	15.65	15.08	14.55	13.60
Over 35%	5	2,775	3.29	1.95	1.74	2.06	1.91	1.77	1.84

Table D-18

NEW MEXICO

PERCENT CHANGES IN FUNDING BETWEEN ACHIEVEMENT AND POVERTY ALLOCATIONS

Dist. Poverty Range	No. Districts	Total Enrollment	Percentile cutoffs defining low achievers					
			10 Pctl. % Change	15 Pctl. % Change	20 Pctl. % Change	25 Pctl. % Change	30 Pctl. % Change	35 Pctl. % Change
0-5%	12	7,787	+393%	+465%	+488%	+536%	+540%	+568%
5-10%	13	32,452	+ 16%	+ 28%	+ 34%	+ 45%	+ 49%	+ 58%
10-15%	20	146,944	+ 2%	+ 1%	+ 2%	+ 3%	+ 3%	+ 3%
15-20%	14	41,345	- 17%	- 16%	- 18%	- 19%	- 17%	- 15%
20-25%	7	10,831	- 43%	- 33%	- 28%	- 27%	- 27%	- 27%
25-30%	6	4,710	- 1%	- 3%	- 1%	- 2%	- 4%	- 7%
30-35%	4	16,392	+ 34%	+ 26%	+ 15%	+ 11%	+ 7%	0
35+	5	2,775	- 41%	- 47%	- 37%	- 42%	- 46%	- 44%

Table D-19

NEW MEXICO

PERCENT CHANGE IN DISTRICTS BETWEEN ALLOCATION BASED ON AFDC AND CENSUS CHILDREN AND ALLOCATION BASED ON 15TH PERCENTILE CUTOFF CRITERION

Percent Change	Number of Districts	Total Enrollment	Average Size of District
-100% to -75%	11	8,182	744
-75% to -50%	7	15,802	2,257
-50% to -25%	12	21,781	1,815
-25% to 0	16	112,681	7,043
0 to 25%	7	43,094	6,156
25% to 50%	4	29,138	7,285
50% to 75%	6	19,113	3,186
75% to 100%	2	4,285	2,143
100% to 125%	1	926	926
125% to 150%	3	3,737	1,246
150% to 175%	2	1,118	559
175% to 200%	0	-	-
200% to 225%	1	629	629
225% to 250%	0	-	-
250% to 275%	0	-	-
275% to 300%	1	179	179
300% to 325%	0	-	-
325% to 350%	1	459	459
350% to 375%	0	-	-
Over 375%	7	2,112	302

Note on New Mexico Simulation

New Mexico presents some special problems, most of which arise from altering decision rules regarding allocation levels. New Mexico experienced (like other states) some sharp changes in the number of Title I Formula Children residing in each district when the figures from the 1970 Census were used instead of the figures from the 1960 Census. Consequently, Dr. Gilbert Martinez of the Title I office was forced to make some adjustments in his funding projections. New Mexico now guarantees each local district 90 percent of its previous year's funding. To finance this guarantee, it has stipulated that no district may receive more than 115 percent of its previous year's funding: this tends to skew the distribution in such a way that the distribution of Title I Formula Children appears more even than it actually is.

The bulge in the New Mexico projections for the category of "30-35%" poverty children, where instead of the expected negative percent changes in funding there appear positive changes, is due to a single large district, Gallup. When Dr. Martinez was asked about Gallup--whether in fact there might be some circumstance which would produce this large and unaesthetic "bulge"--he answered that he could not think of anything, but did say that the Gallup funding for this year should have been $662,000, a great increase over the $542,000 it received last year. Cutting the projected figure to 115 percent of the previous year's figure yields only $623,000, which is 6 percent less than it actually qualifies for. This differential is not large enough, however, to account for the appearance of the mysterious bulge. Thus its source, unfortunately, remains a mystery.

Note on New York

We did not ourselves analyze New York state. However, from another study, we can see that the results in that state fit the pattern we describe for our sample.

Under the direction of Lorne H. Woolatt, Associate Commissioner for Research and Evaluation, a New York state study was conducted in the spring of 1973 comparing the Title I distribution by counties under the present system with that which would be the case if the criterion for participation was the bottom three stanines (22 percent) in the New York Pupil Evaluation Program. The test employed was developed in the state of New York itself. The 6th grade was the level from which the criterion was projected. Non-English speaking students were not tested and their scores were reported as zero, placing them in the bottom stanine.

The New York study used counties as the analytic unit. It will be recalled that there is a disparity between district AFDC/Census counts and county enumerations (which include AFDC, Census, neglected, delinquent and foster children). In New York state, only 70 percent of the Title I Formula Children are AFDC and Census Children who are currently enrolled in the state's schools. Thus, only the 70 percent of the eligible county students were included in the projections, in order to maintain comparison. The New York Study findings are, as stated by Dr. Woollatt:

> ....the number of reading disadvantaged is 33 percent more than the number of poverty eligibles: in New York City the numbers almost coincide; upstate the reading disadvantaged are double the number of the poverty criterion.

As a consequence, redistributing a fixed sum of ESEA Title I funds from poverty eligible to reading disadvantaged would reduce New York City by $30,000,000 and redistribute $30,000,000 in the rest of the State.*

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*Letter from Lorne H. Woollatt to Willis W. Harman, September 14, 1973.

Table D-20

CALIFORNIA

URBAN, SUBURBAN AND RURAL DISTRICTS.

Proportions of Title I Funds Accruing to Each Type of District Under Each Test Score Cutoff*

Category	No. of Dists.	Total Enrollment	Percent of State Enroll.	Percent of Title I Enroll.	Percentage of State Children Scoring Below Each Cutoff					
					10th Pctl.	15th Pctl.	20th Pctl.	25th Pctl.	30th Pctl.	35th Pctl.
. Large Cities Over 500,000	3	828,045	19%	31%	28%	27%	25%	24%	23%	23%
. Large Cities 200-500,000	4	209,016	5%	8%	5%	5%	5%	5%	5%	5%
. Suburbs of Large Cities	153	1,470,810	33%	23%	26%	27%	27%	28%	29%	29%
. Rural Areas Near Large Cities	34	116,109	3%	1%	2%	2%	2%	2%	2%	2%
. Med. Size Cities 50,000-200,000 Not Near Large Cities	36	647,989	15%	15%	15%	15%	15%	15%	15%	15%
. Suburbs of Med. Cities	36	118,018	3%	2%	2%	2%	2%	2%	2%	2%
. Rural Areas Near Large Cities	126	121,386	3%	2%	3%	3%	3%	3%	3%	3%
. Small Cities Less Than 50,000	202	706,401	16%	12%	15%	15%	15%	16%	16%	16%
. Rural Areas Not Near Cities	421	230,325	5%	5%	5%	5%	5%	5%	5%	5%
. Total	1,015	4,448,099								

Sums in columns do not always total 100% due to rounding.

Table D-21

CALIFORNIA

Analysis of Funding Shifts Based on Percentage of Black Students Residing in Each District.
Proportion of Title I Funds Accruing to Each Type of District Under Each Criterion Cutoff

Percent of District Enrollment which is Black	Number Districts	Total Enrollment	Percent of State Enrollment	Percent of Title I Children	Percentage of State's Children Scoring Below Each Cutoff 10th Pctl.	15th Pctl.	20th Pctl.	25th Pctl.	30th Pctl.	35th Pctl.
0 - 10	956	3,117,623	70	48	56	57	59	61	62	63
10+ - 20	33	373,204	8	10	8	8	8	8	8	8
20+ - 30	12	796,852	18	33	29	27	26	25	24	23
30+ - 40	4	40,318	1	2	1	1	1	1	1	1
40+ - 50	1	14,715	0	0	0	0	0	0	0	0
50+ - 60	3	1,144	0	0	0	0	0	0	0	0
60+ - 70	2	60,134	1	4	2	2	2	2	2	2
70+ - 80	2	2,179	0	0	0	0	0	0	0	0
80+ - 90	2	41,930	1	3	3	3	3	2	2	2
Over 90	0	0								
Total	1,015	4,448,099								

* Sums may not total 100 percent in all columns due to rounding.

Table D-27

CALIFORNIA

Analysis of Funding Shifts Based on Percentage of Minority Students Residing in Each District Proportion of Title I Funds Accruing to Each Type of District Under Each Criterion Cutoff

Percent of District Enrollment which is Minority	Number Districts	Total Enrollment	Percent of State Enrollment	Percent of Title I Children	Percentage of Children Scoring Below Each Cutoff					
					10th Pctl.	15th Pctl.	20th Pctl.	25th Pctl.	30th Pctl.	35th Pctl.
0 - 10	405	969,739	22	8	11	12	13	14	15	15
10+ - 20	219	987,589	22	13	14	15	16	17	17	18
20+ - 30	127	739,233	17	13	16	16	16	17	17	17
30+ - 40	97	505,838	11	14	13	13	13	13	12	12
40+ - 50	57	231,400	5	8	8	7	7	7	7	7
50+ - 60	43	708,708	16	28	26	25	23	22	22	21
60+ - 70	33	179,339	4	8	6	6	6	6	6	5
70+ - 80	14	71,146	2	4	2	3	2	2	2	2
80+ - 90	13	10,942	0	1	0	0	0	0	0	0
90+ - 100	7	44,165	1	3	4	3	3	3	2	2
Total	1,015	4,448,099								

* Sums may not total 100 percent in all columns due to rounding.

Table D-22

CALIFORNIA

Analysis of Funding Shifts Based on Percentage of Spanish-Surnamed Students Residing in Each District

Proportion of Title I Funds Accruing to Each Type of District Under Each Criterion Cutoff

Percent of District Enrollment which is Spanish-Surnamed	Number Districts	Total Enrollment	Percent of State Enrollment	Percent of Title I Children	Percentage of State Children Scoring Below Each Cutoff: 10th Pctl.	15th Pctl.	20th Pctl.	25th Pctl.	30th Pctl.	35th Pctl.
0 - 10	562	1,678,270	38	22	23	24	26	27	28	29
10+ - 20	175	1,254,184	28	28	27	27	27	28	28	28
20+ - 30	104	1,098,518	25	37	36	35	34	33	32	31
30+ - 40	65	213,242	5	6	6	6	6	6	6	6
40+ - 50	37	79,340	2	3	3	3	2	2	2	2
50+ - 60	39	81,218	2	3	3	3	3	3	3	3
60+ - 70	15	27,158	1	1	1	1	1	1	1	1
70+ - 80	8	7,759	0	0	0	0	0	0	0	0
80+ - 90	10	8,410	0	0	0	0	0	0	0	0
Over 90	0	0								
Total	1,015	4,448,099								

* Sums may not total 100 percent in all columns due to rounding.

Table D-24

ALABAMA

Analysis of Funding Shifts Based on Percentage of Black Students Residing in Each District*
Part I: Proportions of Title I Funds Accruing to Each Type of District Under Each Criterion Cutoff

Percent of School Enrollment which is Black	No. Districts	Total Enrollment	Percent of State Enrollment *	Percent of Title I Children ‡	Percentage of State Children Scoring Below Each Cutoff					
					10th Pctl.*	15th Pctl.*	20th Pctl. *	25th Pctl. *	30th Pctl.*	35th Pctl. *
0 - 10	28	136,465	17	11	9	10	10	11	11	12
10+ - 20	21	114,719	14	10	8	8	9	9	9	10
20+ - 30	21	163,510	20	15	17	18	19	19	19	19
30+ - 40	14	61,823	8	7	7	8	8	8	8	8
40+ - 50	13	162,112	20	22	28	27	26	26	25	24
50+ - 60	9	89,675	11	14	13	13	13	13	13	13
60+ - 70	6	29,301	4	6	6	5	5	5	5	5
70+ - 80	6	21,507	3	6	4	4	4	4	4	4
80+ - 90	2	6,888	1	2	1	1	1	1	1	1
90+ - 100	5	19,032	2	7	6	5	5	5	4	4
Total	125	805,032								

* Sums may not total 100 in all columns due to rounding.

Table D-25

ALABAMA READING TEST RESULTS
(All 4th Graders, Spring 1973)

Anchor Percentile	Total Reading Raw Score	Probability that Student Scored Below Raw Score	Estimated Number of Low Achievers (probability X enrollment)
10	11	.2380	174,524
15	13	.3342	245,067
20	14	.3817	279,899
25	15	.4275	313,484
30	16	.4701	344,722
35	17	.5119	375,374

Alabama utilized the California Achievement Test, Level 3, Form A, Reading in its statewide testing program for 4th graders. The conversion to national percentiles was done by finding the raw score corresponding to the individual Anchor percentiles, and then finding the probability that Alabama students scored below this raw score by utilizing the Alabama statewide frequency distribution. This probability was multiplied by the Alabama enrollment of 733,296 to obtain the total number of estimated academically deficient children in the state of Alabama.

Table D-26

ARKANSAS READING TEST RESULTS
(42 Percent of 8th Graders, Spring 1973)

Anchor Percentile	SRA 6th-Grade Percentile	Students Scoring Below Anchor Percentile		Estimated Number of Low Achievers (percent x enrollment)
		Number	Percent	
10	9	1,932	11.49%	84,256
15	14	2,779	16.53	121,214
20	19	3,682	21.91	160,665
25	24	4,777	28.42	208,403
30	30	5,901	35.11	257,460
35	35	6,708	39.91	292,658

Arkansas was the only state in the survey that tested as high as the 8th grade and tested a sample (42 percent of all the 8th grade children, from 36 percent of the districts were tested). It used the SRA Achievement Test, Form F, Red, Reading. A weakness exists in converting Anchor norms into the SRA norms at the 8th grade, because children in 8th grade do not go to the same schools, and therefore the samples are probably not as closely alike as they would be if norms for both the tests were taken from the same sample.

Arkansas' sampling was not random. Only districts that applied to participate in the testing program did so. However, funding was provided by ESEA Title IV-A and Title III,* so cost was not a factor in a district's decision to participate. The number of children tested was 16,805; the total enrollment was 733,296.

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*Educational Testing Service, State Educational Assessment Programs, 1973 Revision (1973).

Nevertheless, the comparison of Anchor percentiles 10, 15, 20, 25, 30 and 35 with corresponding SRA Reading norms (Form "Green-E") shows that there is a close correspondence (9, 14, 15, 19, 24, 30 and 35).

Table D-27

ARIZONA READING TEST RESULTS
(All 3rd Graders, Fall 1972)

Metropolitan Percentiles*	Metropolitan Standard Score, Fall 3rd-Grade	Grade Equivalent	Percent of Children Taking Test Scoring Below Percentile	Estimated Number of Low Achievers (percent x enrollment)
10	44.0	2.0	5.50%	25,708
15	46.5	2.2	9.93	46,415
20	48.5	2.3	14.47	67,636
25	50.5	2.4	16.83	78,667
30	51.5	2.5	21.02	98,252
35	52.5	2.6	23.56	110,124

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*Used instead of Anchor Percentiles (see explanation above).

The Metropolitan Achievement Test (Primary II h, Reading), 3rd or 4th graders, presents special problems. Metropolitan was normed using a test booklet, instead of a machine-scored answer sheet, for the 4th grade and below. The test booklet takes less of the student's time than the machine-scored answer sheet. Anchor norms were developed using a machine-scoring answer sheet. The difference between the Anchor norms and the Metropolitan norms is thus composed of (1) Metropolitan norming errors and (2) the differences caused by the two testing procedures. (Of course, there are undoubtedly errors in the Anchor norms too; but these are minute when compared with other norming procedures and for the sake of this study are taken to be the closest known estimator of the true parameter.) Furthermore, the difference is greater in the middle of the distribution (around the 50th percentile) and smaller at the ends, probably because the change made more difference to those in the middle and less to faster students (because the time factor was less of a constraint for them) and to slower students (because they already had all the time they needed to work the test.)

It was decided that the Metropolitan norms represented a truer picture of the actual distribution in this case than the Anchor norms, because Arizona, in testing its 3rd graders, used the test booklet rather than the computer-scored answer sheet. Therefore, it was a relatively simple matter to use the Metropolitan 10, 15, 20, 25, 30 and 35th percentiles, apply the fall 3rd-grade norms, and see how many of the Arizona 3rd graders scored at these levels or below. The numbers were divided by the number of children taking the test (36, 211) to yield the percent of the children scoring below these levels. This percentage figure was then multiplied by the Arizona enrollment for 1972-73 of 467,421 to yield the projected numbers.

Table D-28

CALIFORNIA READING TEST RESULTS
(All 6th-Graders, Fall 1972)

Anchor Percentile	Publisher's Percentile, Q-3	Raw Score	Percent of Children Scoring Below Raw Score	Estimated Number of Low Achievers (percent x enrollment)
10	10	31	11%	484,770
15	15	38	18	793,260
20	19	42	22	969,540
25	23	45	26	1,145,820
30	27	49	31	1,366,170
35	31	52	36	1,586,520

California ADA, fall 1972 = 4,407,000

The California conversion from the Comprehensive Tests of Basic Skills Reading Level 2, Form Q was done in the following manner. The comparison between Anchor percentiles 10, 15, 20, 25, 30 and 35 and CTBS percentiles for 6th grade, Level 3, Form Q, was noted. The corresponding percentiles for the CTBS were then written down in the column "Publisher's Percentile, Q-3."

Then, in the volume titled, Percentile Rank Norms Tables and Summary of Test Scores for the California State Testing Program, Fall 1972, conversion was made from the raw scores to the state percentile ranks in Table 6 of that volume--"Grade 6, Percentile Ranks, California State Testing Program, Fall 1972, Pupils Norms"--which yields the percent of California children in the 6th grade testing program who scored below these raw scores.

Delaware

Delaware's statewide testing system utilizes a test compiled by its State Department of Education. It is a variation of the Sequential Tests of Educational Progress. However, there is no way of comparing results on Delaware's test with results from other states, since the test was not included on the Anchor survey.

Therefore, Delaware is not included in this interstate analysis.

Table D-29

HAWAII READING TEST RESULTS
Sequential Tests of Educational Progress I, Form AA,
(All Hawaii 4th Graders, October 1972)

Anchor Percentile	Equivalent Step II 4A Percentile	Step II 4A Raw Score, Fall	Step I Standard Score	Percent of Students Scoring Below Standard Score	Estimated Number of Low Achievers (percent x enrollment)
10	8	403.4	226.4	8.7%	15,737
15	13	404.4	227.4	13	23,606
20	17	405.2	228.2	16	29,054
25	23	406.4	229.4	20	36,317
30	27	407.25	230.25	25	45,397
35	31	408.25	231.25	28	50,844

Hawaii's estimated enrollment for 1972-73 is 181,587.

Inclusion of Hawaii in the interstate analysis required that test scores from the 1957 edition of the Sequential Tests of Educational Progress I (Form AA) be converted to the new (1969) STEP. At first this seemed an impossible task, but according to Pat Wheeler of the Educational Testing Service staff, who participated in developing the new edition, the standard scores on the new test were equal to those on the 1957 version plus 177. With this conversion in mind, the analysis became possible.

Hawaii 4th graders took the STEP-4A in October. Therefore, after Anchor percentiles had been converted to STEP-II (4A) percentiles, it was necessary to determine the standard score corresponding to the STEP percentiles in the fall of the year for 4th graders. Following this, 177 points were subtracted from the standard scores, and the percentile point in the Hawaii percentile distribution corresponding to this score was found. For the Anchor 10th percentile, a special interpolation was required.*

After the percentage of Hawaii 4th-graders who had scored below the Anchor percentile cutoff points had been determined, this percentage was multiplied by the Hawaii enrollment of 181,587 to determine the estimated proportion of Hawaii school children scoring below the Anchor percentile cutoff points.

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*An attempt to determine this point was made using Z-scores and the Hawaii standard distribution. However, it produced a percentile cutoff point of 14.83, higher than the score for the 15th percentile cutoff point. This shows that the Hawaii distribution is not normal. No other way for filling in the missing percentile figure could be determined, except to take 2/3 of the 15th percentile figure, since 10% is 2/3 of 15%.

Table D-30

IOWA READING TEST RESULTS
(All 5th Graders, Winter 1972)

Anchor Percentiles	ITBS II-5, Spring Percentiles	Publisher's Grade Score Winter	Iowa Grade Score, Winter	Percent of Children Scoring Below Iowa Grade Scores	Estimated Number of Low Achievers (percent X enrollment)
10	5	32	27	1.67%	10,307
15	11	36	31	4	24,687
20	15	38	32	5.33	32,896
25	19	41	35	9.33	57,583
30	25	44	37	12	74,062
35	30	46	39	15.35	94,738

Iowa has a very complete testing program. It tests all children in all grades every year. However, inasmuch as testing is done at all times during the year, a frequency distribution for each grade in Iowa is more difficult and time-consuming to produce. Consequently, the statewide frequency distribution for the 1972-73 testing was not available at the time this analysis was performed. We have used the frequency distribution from the 1971-72 Iowa Tests of Basic Skills, Level II, Form 5. Iowa's enrollment was 617,185.

The analysis is identical to that performed on the North Dakota figures, described later.

Massachusetts

Massachusetts tested its 4th grade children in January 1971, utilizing the Comprehensive Tests of Basic Skills, Level 1, Form QW. The State Department of Education was unable to provide us with a frequency distribution for the state as a whole, and owing to the difference in the levels utilized between the Anchor test and the state testing program (Level 1 vs. Level 2), it was decided that a simulation was not possible in this case.

Table D-31

MISSISSIPPI READING TEST RESULTS
(85% of Districts' 5th Grade Children in the Spring of 1973)

Anchor Percentile	Reading Raw Score Corresponding to Anchor Percentiles	Probability that Student Scored Below Raw Score	Estimated Number of Low Achievers (probability x enrollment
10	29	.3156	155,212
15	33	.4090	201,146
20	37	.5172	254,359
25	40	.5975	293,851
30	43	.6520	320,654
35	45.5	.7074	347,899

$N = 39{,}067$

$$Z = \frac{X-E(x)}{(x)}$$

Determination of Z-Score

1. $P(X \le 29) = P\left(Z \le \frac{36.7 - 29}{16.116}\right)$

$= P(Z \le 0.4777)$

$= .3120$

Interpolation

.45 = .3264
.48 = .3156
.50 = .3085

2. $P(X \le 33) = P\left(Z \le \frac{33-36.7}{16.116}\right)$

$= P(Z = -.2295)$ or $-.23$

$= .4090$

.20 = .4207
.23 = .4090
.25 = .4013

Determination of Z-Score	Interpolation
3. $P(X \le 34) = P\left(Z \le \frac{34 - 36.7}{16.116}\right)$ $= P(Z \le -.1675)$ $= .4207$	$.15 = .4404$ $.1675 = .4354$ $.20 = .4207$
4. $P(X \le 37) = P\left(Z \le \frac{37-36.7}{16.116}\right)$ $= P(Z \le .0434)$ $= .5172$	$.00 = .5000$ $.0434 = .5172$ $.05 = .5199$
5. $P(X \le 40) = P\left(Z \le \frac{40-36.7}{16.116}\right)$ $= P(Z \le .2047)$ $= .5975$	$.20 = .5793$ $.2047 = .5975$ $.25 = .5987$
6. $P(X \le 43) = P\left(Z \le \frac{43-36.7}{16.116}\right)$ $= P(Z \le .3909)$ $= .6520$	$.35 = .6368$ $.391 = .6520$ $.40 = .6554$
7. $P(X \le 45.5) = P\left(Z \le \frac{45.5-36.7}{16.116}\right)$ $= P(Z \le .5460)$ $= .7074$	$.50 = .6915$ $.546 = .7074$ $.55 = .7088$

The Mississippi analysis required a technique different from any other state. To begin with, the test, form, and season are all the same as for the Anchor standardization (5th grade, California Achievement Test, Level 3, Form A, Spring testing), so that differences in publisher's norms are eliminated. But from there the similarity ends. Mississippi computes only the mean, standard deviation, and the 10th, 25th, 50th, 75th and 90th percentiles, and these for Mississippi. Therefore, if Mississippi was to be included in the interstate comparison, we had to assume that the distribution of test scores was normal, and use Z-scores to determine the number of children who probably scored in the Anchor percentiles of 10, 15, 20, 25, 30 and 35.

This assumption of normalcy is somewhat suspect because no distributions are perfectly normal, and because the racial makeup of Mississippi implies that the distribution may, in fact, be bimodal rather than normal in form.

Mississippi also maintains the testing program as a voluntary one. Thus, the test included only 85.3 percent of the districts. However, since testing was mandatory for all students within participating districts, presumably a "sampling" error would be restricted to the participating districts and not extend to the student population within the district.

The Mississippi test used was administered in the spring of 1972 (and thus the information is one year older than for most of our states). The mean and standard deviation of the test results were used to project the probability, to four decimal places, that students scored below the desired percentile cutoffs. These probabilities were then multiplied by the ADA figure for Mississippi for 1972-73 (491,800) to give the number of students who would qualify statewide if the results were the same as in the preceding year.

New Hampshire tests only a portion of its children, owing to a shortage of funds. In 1970 the state tested 8,467 6th-grade students, which is a larger and presumably better sample of its 13,000 6th-graders than the 6,400 tested in the fall of 1971. Thus, figures from the 1970 testing were utilized.

The Stanford Achievement Test provides no "Total Reading" score (Level II, Form X, Word Meaning and Paragraph Meaning, were used). Therefore, when making use of this test, the scores for both the Word Meaning Test and the Paragraph Meaning Test must be averaged to provide the best estimate of the total reading ability of children taking the test.

Initially, the Anchor percentiles of 10, 15, 20, 25, 30, and 35 were converted to the SAT percentiles on Form X (the test used in the Anchor norming). These SAT percentiles were then utilized in determining the proper grade score for 6th graders taking the Word Meaning and the Paragraph Meaning tests in the fall of the year.

The grade scores were then converted to raw scores. From frequency distributions provided by the New Hampshire State Department of Education, the number of children scoring below each of these raw score cutoff points was found. The number of children in each category was then divided by the total number of children taking the test to find the percentage of children scoring below each cutoff point. This percentage for the Word Meaning test and for the Paragraph Meaning test were averaged. This averaging represents an estimate of the total percentage of children whose "Total Reading" score falls below the Anchor criterion cutoff points, and when multiplied by the total New Hampshire enrollment for 1972-73 of 155,300, yields the best estimate of the total number of New Hampshire students who score below these criterion cutoff points.

Table D-32

NEW HAMPSHIRE READING TEST RESULTS

(Stanford Achievement Test, Level II,
Form X, Word Meaning and Paragraph Meaning, given
(65 percent of 6th Graders, Fall 1970)

	Word Meaning Test					Paragraph Meaning Test						
Anchor Pctl.	SAT II-W Pctl.	Grade Score	Form X Raw Score	No. Scoring Below	Percent Scoring Below	SAT II-W Pctl.	Grade Score	Form X Raw Score	No. Scoring Below	Percent Scoring Below	Average Percent (both tests)	Est, Number of Low Achievers (average percent x enrollment)
10	5.3	37	10	361	4.26%	7.0	37.5	17	912	10.77%	7.52	11.663
15	8	39	12	605	7.14	9.5	40	18	1082	12.77	9.95	15,452
20	10.7	41	13	767	9.06	12.0	42	20	1532	18.09	13.58	21,074
25	14.7	44	15	1190	14.05	16.0	44	22	2012	23.76	18.90	29,352
30	18	46	16	1457	17.21	20.0	47	24	2473	29.20	23.20	36,030
35	21	47	17	1697	20.04	23.3	48	25	2742	32.38	26.21	40,704

8,465 6th grade N.H. students took SAT Word Meaning Test.

8,467 6th grade N.H. students took SAT Paragraph Meaning Test.

155,300 children were enrolled in N.H. schools in 1972-73.

Table D-33

NEW MEXICO READING TEST RESULTS
(All 5th Graders, October 1972)

Anchor Percentile	Publisher's Percentile, Q-2	Raw Score, Fall	Students Scoring Below Raw Score		Estimated Number of Low Achievers (percent x enrollment)
			Number	Percent	
10	11	25	3,105	13.06%	36,381
15	16	30	5,500	23.14	64,443
20	21	33	6,672	28.07	78,176
25	26	37	7,870	33.11	92,213
30	31	41	9,467	39.83	110,925
35	35	44	10,791	45.40	126,438

N Taking Test = 23,771

New Mexico Enr. = 278,525

The test used by New Mexico was the Comprehensive Tests of Basic Skills, Level 2, Form Q. The total numbers of 5th graders scoring in the Anchor 10th, 15th, 20th, 25th, 30th and 35th percentiles were determined by adding the sum of the numbers of children in each of the New Mexico ethnic groups who scored in each percentile range, since the frequency distribution for the state's 5th graders as a whole was not available.

With this exception, the New Mexico projections were conducted in the same manner as for other states: Anchor percentiles were converted to publisher's percentiles, the raw score corresponding to each publisher's percentile interval was determined, and the number of 5th graders scoring in each interval was found. Dividing this number by the total number of

5th graders taking the test (23,771) yields the percentage scoring in the interval. This percentage was then multiplied by the New Mexico enrollment for 1972-73 of the 278,525 to yield the projected number of New Mexico children falling below the respective Anchor percentile cutoff points.

Table D-34

NORTH CAROLINA READING TEST RESULTS
(All 6th Graders, Spring 1972)

Anchor Percentile	Publisher's Percentiles	Raw Score	Percent of Students Scoring Below Raw Score	Estimated Number of Low Achievers (percent x enrollment)
10	8.3	44	13 %	165,177
15	12	48	20	254,119
20	16	50	25	317,649
25	20.6	53	31	393,884
30	26	56	39	495,532
35	30.7	58	42.5	540,003

North Carolina used the Iowa Test of Basic Skills, Level II, Reading. The state tests its 6th grade students in the spring. The conversions were done in the manner of the other ITBS conversions. The state's enrollment in 1972-73 was 1,270,595.

Table D-35

NORTH DAKOTA READING TEST RESULTS
(All 5th Graders, Fall 1972)

Anchor Percentile	Publisher's Percentile, II-5	Grade Equivalent	Students Scoring Below Raw Score		Estimated Number of Low Achievers (percent x enrollment)
			Number	Percent	
10	5.5	2.9	145	4.38	5,979
15	11	3.3	313	9.47	12,928
20	15.3	3.5	413	12.50	17,065
25	19.3	3.7	467	14.13	19,290
30	25.3	4.05	664	20.10	27,440
35	3[illegible]	4.3	841	25.46	34,757

North Dakota tested 3,303 5th grade students in the fall of 1972 using the Iowa Tests of Basic Skills, Form 5, Level II, Reading. This is the same for for which grade 5 was standardized in the Anchor Study, so the only shift necessary was to go from the Anchor spring norms to the ITBS fall norms. The same assumption was made here as in earlier analyses: that the differences between the Anchor percentiles and the publisher's percentiles would be the same had they been done in the fall as in the spring. The state's enrollment was 136,518.

Table D-36

RHODE ISLAND READING TEST RESULTS
(All 4th Graders, Fall 1972)

Anchor Percentile	Publisher's Percentiles	Grade Score	Students Scoring Below Grade Score		Estimated Number of Low Achievers (percent x enrollment)
			Number	Percent	
10	7	22	1319	17.92	32,256
15	14	26	1885	25.60	46,080
20	19	28	1894	25.72	46,296
25	23	30	1916	26.02	46,836
30	27	32	1951	26.50	47,700
35	33	34	2595	35.24	63,432

Rhode Island conducts its statewide testing program on 4th and 8th graders. Our analysis is concerned with the 4th-grade testing using the Iowa Tests of Basic Skills, Form S, Reading, administered in the fall of 1972. At that time 7,362 students were tested out of the enrollment of 180,000. The analysis is comparable to the one carried out for the North Dakota ITBS.

Table D-37

TENNESSEE READING TEST RESULTS
(All 5th Graders, Fall 1970)

Anchor Percentile	Metropolitan Percentile	Standard Score	Percent of Students Scoring Below Standard Score	Estimated Number of Low Achievers (percent x enrollments)
10	10	56	10%	84,500
15	14	59	17	143,650
20	18	61	22	185,900
25	24.5	64	31	261,950
30	30	67	39	329,550
35	34	69	45	380,250

Tennessee tested its 5th graders using the Metropolitan Achievement Test--1970 edition, Form F--and its statewide test distribution was analyzed in a manner very similar to other states. The Anchor percentiles have been coverted to corresponding Metropolitan percentiles, which were then used to find the standard score cutoffs for 5th graders tested in the fall. From these standard scores, the percent of Tennessee 5th graders scoring below the criterion cutoff points was determined, and then multiplied by the total Tennessee enrollment for 1972-73 of 845,000.

Table D-38

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Formula: Alabama
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Orshansky Index*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	4	11,725	1%	0%	-44 %	-22%	-18%	+9 %	-7 %	+12%
Over 5%-10%	4	8,102	1	0	+102	+103	+113	+127	+133	+142
Over 10%-15%	9	60,594	8	3	+31	+33	+36	+41	+45	+51
Over 15%-20%	8	21,285	3	1	-9	+1	+7	+14	+19	+21
Over 20%-25%	18	128,824	16	10	+4	+11	+14	+15	+18	+23
Over 25%-30%	16	99,768	12	10	+2	+5	+6	+8	+9	+10
Over 30%-35%	16	108,171	13	13	-0.5	+3	+4	+7	+9	+9
Over 35%-40%	14	217,315	27	30	+8	+5	+4	+4	+2	+2
Over 40%-45%	7	35,109	4	5	-0.7	+1	+2	-0.8	+0.1	-1
Over 45%	29	114,139	14	27	-14	-18	-19	-22	-24	-26

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* Sums do not always total 100%, due to rounding.

Table D-39

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income under $3,000: Alabama
(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever" Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	7	18,116	2%	0%	0%	+11%	+19%	+33%	+38%	+51%
Over 5%-10%	17	79,772	10	4	+20	+25	+28	+34	+39	+44
Over 10%-15%	32	227,677	28	19	+7	+15	+18	+20	+23	+25
Over 15%-20%	27	155,262	19	18	+2	+2	+2	+5	+5	+6
Over 20%-25%	12	206,568	26	29	+12	+9	+7	+6	+5	+4
Over 25%-30%	6	21,943	3	4	-20	-16	-14	-13	-13	-18
Over 30%-35%	5	25,149	3	5	-12	-17	-19	-21	-21	-23
Over 35%-40%	8	29,253	4	7	-27	-27	-26	-28	-32	-31
Over 40%-45%	3	16,222	2	5	-16	-20	-22	-25	-26	-28
Over 45%	8	25,070	3	9	-20	-28	-32	-36	-38	-41

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*Sums do not always total 100%, due to rounding.

Table D-40

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: Alabama
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	5	14,786	2%	0.2%	-64%	-34%	-21%	-12%	-7%	-6%
Over 5%-10%	6	13,045	2	0.5	+57	+59	+62	+68	+75	+79
Over 10%-15%	13	69,473	9	4	+18	+22	+25	+31	+36	+41
Over 15%-20%	20	151,744	19	12	-3	+6	+9	+11	+15	+18
Over 20%-25%	21	121,630	15	13	+17	+18	+19	+19	+19	+20
Over 25%-30%	21	273,750	34	36	+8	+7	+6	+6	+5	+5
Over 30%-35%	10	47,133	6	7	-15	-13	-11	-11	-10	-9
Over 35%-40%	4	15,338	2	3	-11	-5	-4	-6	-4	-12
Over 40%-45%	3	15,709	2	3	-32	-32	-32	-29	-27	-27
Over 45%	22	82,424	10	22	-15	-20	-22	-25	-28	-30

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*Sums do not always total 100%, due to rounding.

Table D-41

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: Alabama
(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	3	9,125	1%	0.1%	-68%	-51%	-50%	-41%	-39%	-37%
Over 5%-10%	4	8,991	1	0.2	+37	+45	+57	+73	+80	+98
Over 10%-15%	10	62,459	8	3	+29	+31	+33	+37	+41	+47
Over 15%-20%	6	17,198	2	1	-3	+10	+17	+28	+35	+36
Over 20%-25%	11	96,243	12	8	+3	+8	+10	+12	+14	+17
Over 25%-30%	19	104,312	13	10	-3	+1	+2	+2	+5	+8
Over 30%-35%	18	101,494	13	12	+7	+13	+15	+17	+18	+18
Over 35%-40%	16	248,357	31	33	+7	+5	+4	+4	+3	+2
Over 40%-45%	8	38,968	5	6	-15	-15	-14	-12	-10	-10
Over 45%	30	117,885	15	27	-12	-15	-16	-19	-21	-23

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*Sums do not always total 100%, due to rounding.

Table D-42

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: Alabama
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	1	3,090	38.0%	0.02%	+79	+176%	+180%	+174%	+146%	+151%
Over 5%-10%	4	11,696	1	0.23	-82	-61	-48	-39	-31	-19
Over 10%-15%	3	5,041	0.6	0.17	+127	+106	+102	+115	+116	+125
Over 15%-20%	9	60,748	8	3	+21	+23	+25	+29	+33	+39
Over 20%-25%	5	15,875	2	1	-2	+10	+17	+25	+30	+32
Over 25%-30%	7	70,440	9	6	+3	+5	+6	+7	+8	+10
Over 30%-35%	13	71,003	9	7	+3	+7	+7	+5	+9	+12
Over 35%-40%	13	72,382	9	8	-6	-1	+0.93	+4	+6	+6
Over 40%-45%	13	70,798	9	9	-4	+2	+5	+7	+9	+9
Over 45%	57	423,959	53	66	-0.29	-3	-4	-5	-6	-7

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*Sums do not always total 100%, due to rounding.

Table D-43

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Formula: California
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Orshansky Poverty Index*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	277	720,838	16 %	5 %	+52%	+64%	+76%	+88%	+99%	+108%
Over 5%-10%	264	1,842,906	41	27	+54	+53	+52	+53	+53	+53
Over 10%-15%	214	871,019	20	23	-12	-11	-10	-10	-10	-10
Over 15%-20%	114	567,750	13	20	-29	-29	-30	-31	-32	-32
Over 20%-25%	48	249,954	6	12	-20	-23	-27	-30	-33	-35
Over 25%-30%	35	131,724	3	8	-45	-45	-46	-47	-49	-50
Over 30%-35%	26	23,529	0.5	2	-50	-49	-48	-50	-52	-52
Over 35%-40%	14	21,975	0.5	2	-56	-58	-59	-60	-61	-62
Over 40%-45%	13	12,448	0.3	1	-65	-67	-66	-66	-66	-67
Over 45%	10	5,956	0.1	0.7	-64	-65	-63	-64	-64	-65

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*Sums do not always total 100%, due to rounding.

Table D-44

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: California
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	510	2,213,547		27 %	+67%	+67%	+67%	+68%	+69	+70%
Over 5%-10%	350	1,735,558		47	-20	-19	-18	-18	-17	-17
Over 10%-15%	104	303,760		13	-19	-23	-26	-28	-31	-33
Over 15%-20%	37	179,359		11	-45	-45	-47	-49	-50	-51
Over 20%-25%	7	6,782		0.6	-54	-56	-56	-58	-59	-59
Over 25%-30%	4	8,071		0.8	-83	-83	-83	-83	-82	-81
Over 30%-35%	1	16		0			-21	-36	-47	-54
Over 35%-40%										
Over 40%-45%										
Over 45%	2	966		0.2	-89	-86	-88	-88	-87	-86

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*Sums do not always total 100%, due to rounding.

Table D-45

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: California
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	387	907,604		8 %	+41%	+51%	+61%	+71%	+80%	+87%
Over 5%-10%	328	2,124,304		37	+37	+36	+35	+35	+35	+35
Over 10%-15%	159	904,670		30	-26	-26	-26	-26	-27	-27
Over 15%-20%	75	270,400		12	-16	-20	-24	-26	-29	-31
Over 20%-25%	33	186,674		11	-42	-42	-45	-46	-48	-49
Over 25%-30%	13	20,203		1	-64	-61	-60	-59	-60	-54
Over 30%-35%	14	16,264		1	-67	-67	-67	-67	-67	-67
Over 35%-40%	3	7,007		0.7	-74	-74	-75	-76	-75	-75
Over 40%-45%										
Over 45%	3	973		0.2	-89	-85	-87	-88	-87	-85

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*Sums do not always total 100%, due to rounding.

Table D-46

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: California
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	230	492,583		3 %	+73%	+84%	+98 %	+110%	+122%	+131%
Over 5%-10%	254	1,812,504		25	+57	+57	+56	+57	+58	+58
Over 10%-15%	216	824,537		19	-1	-0.8	+0.73	+1	+2	+2
Over 15%-20%	139	759,596		25	-26	-26	-26	-27	-27	-27
Over 20%-25%	74	289,833		12	-21	-25	-28	-30	-33	-34
Over 25%-30%	38	186,180		10	-37	-37	-39	-41	-43	-44
Over 30%-35%	25	41,970		3	-53	-54	-54	-56	-57	-58
Over 35%-40%	14	15,533		1	-44	-44	-44	-46	-48	-49
Over 40%-45%	12	17,540		1	-74	-73	-71	-71	-70	-70
Over 45%	13	7,823		0.8	-69	-69	-70	-70	-71	-71

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*Sums do not always total 100%, due to rounding.

Table D-47

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: California
(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	176	287,869		1%	+129%	+144%	+162%	+181%	+195%	+206%
Over 5%-10%	182	1,478,429		17	+94	+91	+88	+87	+86	+85
Over 10%-15%	179	841,276		15	-2	+1	+5	+8	+11	+13
Over 15%-20%	155	496,315		13	-11	-10	-8	-8	-7	-7
Over 20%-25%	114	720,844		23	-28	-28	-28	-28	-28	-28
Over 25%-30%	74	231,629		9	-13	-18	-21	-24	-27	-29
Over 30%-35%	48	214,957		10	-33	-34	-36	-37	-39	-40
Over 35%-40%	28	97,583		5	-32	-33	-35	-37	-39	-41
Over 40%-45%	18	37,517		2	-64	-62	-61	-62	-62	-62
Over 45%	41	41,680		3	-58	-60	-59	-60	-61	-61

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*Sums do not always total 100%, due to rounding.

Table D-48

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Formula: Delaware
(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Orshansky Index*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	5	42,523	32%	8%	+39%	+52%	+63%	+93%	+98%	+111%
Over 5%-10%	5	27,947	21	13	+33	+32	+34	+39	+41	+46
Over 10%-15%	5	19,543	15	15	-15	-11	-8	-4	-1	+1
Over 15%-20%	5	23,339	18	25	-3	-1	-3	-9	-11	-12
Over 20%-25%	1	3,799	3	5	-29	-28	-28	-29	-28	-28
Over 25%-30%	0									
Over 30%-35%	0									
Over 35%-40%	1	15,129	11	34	-10	-16	-19	-27	-29	-33
Over 40%-45%	0									
Over 45%	0									

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*Sums do not always total 100%, due to rounding.

Table D-49

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Income Under $3,000: Delaware
(Percentage Change in Number of Children Scoring Below Selected
Test Score Levels: By Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever" Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	10	66,460	50%	21%	+30%	+34%	+40%	+53%	+57%	+64%
Over 5%-10%	10	48,458	37	41	-4	-3	-3	-4	-4	-3
Over 10%-15%	1	2,233	2	3	-13	+3	+4	-1	-3	-13
Over 15%-20%	0									
Over 20%-25%	1	15,129	11	35	-12	-18	-21	-28	-30	-35
Over 25%-30%	0									
Over 30%-35%	0									
Over 35%-40%	0									
Over 40%-45%	0									
Over 45%	0									

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*Sums do not always total 100%, due to rounding.

Table D-50

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: Delaware

(Percentage Change in Number of Children Scoring Below Selected Test Score Levels, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll- ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	6	44,928	34%	11%	+24%	+35%	+46 %	+71%	+75%	+85%
Over 5%-10%	9	45,085	34	27	+8	+9	+11	+15	17	+21
Over 10%-15%	5	23,339	18	24	+1	+3	+ 0.3	-5	-7	-9
Over 15%-20%	1	3,799	3	5	-33	-32	-32	-33	-32	-33
Over 20%-25%	0									
Over 25%-30%	1	15,129	11	34	-10	-15	-19	-26	-28	-33
Over 30%-35%	0									
Over 35%-40%	0									
Over 40%-45%	0									
Over 45%	0									

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* Sums do not always total 100%, due to rounding.

Table D-51

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: Delaware
(Percentage Change in Number of Children Scoring Below Selected
Test Score Levels, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	4	26,484	20%	5%	-47%	-31%	-21%	+8%	+13%	+27%
Over 5%-10%	5	37,571	28	16	+48	+48	+52	+59	+62	+67
Over 10%-15%	6	25,958	20	18	-11	-7	-4	+3	+5	+8
Over 15%-20%	5	23,339	18	25	-3	-2	-4	-9	-11	-13
Over 20%-25%	1	3,799	3	5	-33	-31	-31	-32	-32	-32
Over 25%-30%	0									
Over 30%-35%	0									
Over 35%-40%	1	15,129	11	31	-3	-9	-13	-21	-23	-28
Over 40%-45%	0									
Over 45%	0									

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[*] Sums do not always total 100%, due to rounding.

Table D-52

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: Delaware
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll- ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	1	11,476	9%	1%	-47%	-16%	-11%	+31%	+41%	+65%
Over 5%-10%	5	35,219	27	10	+81	+82	+86	+98	+101	+103
Over 10%-15%	4	23,775	18	12	-16	-11	-5	+5	+8	+17
Over 15%-20%	4	11,497	9	9	+10	+11	+16	+14	+17	+18
Over 20%-25%	3	18,750	14	18	-13	-11	-12	-12	-13	-12
Over 25%-30%	3	12,635	10	14	-20	-18	-19	-23	-24	-26
Over 30%-35%	1	3,799	3	5	-36	-34	-34	-35	-35	-35
Over 35%-40%	0									
Over 40%-45%	0									
Over 45%	1	15,129	11	30	+2	-5	-9	-17	-19	-24

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*Sums do not always total 100%, due to rounding.

Table D-53

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Formula: Iowa

(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Orshansky Index*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	44	50,182	9 %	3 %	+187%	+194%	+210%	+218%	+231%	+237%
Over 5%-10%	144	211,066	39	23	+57	+60	+62	+63	+65	+66
Over 10%-15%	99	122,314	23	23	-6	-8	-14	-9	-7	-6
Over 15%-20%	62	56,208	10	15	-34	-33	-32	-33	-31	-30
Over 20%-25%	29	83,010	15	28	-20	-21	-21	-26	-31	-34
Over 25%-30%	12	8,413	2	3	-58	-60	-62	-62	-61	-61
Over 30%-35%	9	6,804	1	3	-72	-75	-73	-75	-73	-71
Over 35%-40%	3	2,458	0.4	1	-77	-78	-77	-74	-75	-74
Over 40%-45%	1	228	0.04	0.2	-54	-51	-53	-51	-59	-58
Over 45%	2	1,073	0.2	0.7	-68	-73	-74	-75	-76	-73

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*Sums do not always total 100%, due to rounding.

Table D-54

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: Iowa
(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll- ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	182	257,670	48 %	24%	+84%	+86%	+91%	+92%	+95%	+98%
Over 5%-10%	146	168,892	31	34	-15	-15	-19	-16	-14	-14
Over 10%-15%	54	102,710	19	36	-29	-29	-29	-33	-36	-39
Over 15%-20%	14	8,412	2	4	-61	-61	-59	-59	-59	-58
Over 20%-25%	6	2,562	0.47	2	-76	-75	-75	-77	-77	-75
Over 25%-30%	3	1,510	0.28	1	-88	-89	-87	-86	-85	-81
Over 30%-35%	0									
Over 35%-40%	0									
Over 40%-45%	0									
Over 45%	0									

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*Sums do not always total 100%, due to rounding.

Table D-55

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: Iowa
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	81	83,853	15 %	5 %	+147%	+151%	+160%	+168%	+165%	+173%
Over 5%-10%	159	243,100	45	31	+35	+36	+34	+38	+41	+42
Over 10%-15%	87	100,798	19	23	-25	-26	-25	-27	-25	-23
Over 15%-20%	44	93,730	17	31	-23	-24	-24	-28	-33	-36
Over 20%-25%	21	13,860	3	6	-62	-64	-63	-63	-61	-59
Over 25%-30%	7	3,744	0.7	2	-75	-75	-72	-73	-71	-68
Over 30%-35%	3	1,223	0.2	0.7	-53	-62	-66	-69	-71	-71
Over 35%-40%	3	1,448	0.3	1	-82	-81	-80	-78	-79	-77
Over 40%-45%	0									
Over 45%	0									

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*Sums do not always total 100%, due to rounding.

Table D-56

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: Iowa

(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	27	29,924	6 %	2 %	+164%	+182%	+195%	+212%	+231%	+240%
Over 5%-10%	97	166,184	31	17	+68	+71	+74	+76	+78	+80
Over 10%-15%	118	150,773	28	24	+10	+8	+4	+8	+10	+10
Over 15%-20%	74	66,800	12	15	-26	-25	-24	-24	-23	-21
Over 20%-25%	45	60,185	11	17	-29	-28	-27	-30	-33	-33
Over 25%-30%	20	53,866	10	19	-17	-20	-20	-26	-30	-35
Over 30%-35%	14	8,306	2	3	-70	-71	-70	-70	-68	-66
Over 35%-40%	5	3,393	0.6	2	-67	-68	-65	-66	-65	-63
Over 40%-45%	2	1,024	0.19	0.6	-75	-78	-80	-78	-79	-79
Over 45%	3	1,301	0.24	0.8	-63	-66	-67	-68	-70	-68

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*Sums do not always total 100%, due to rounding.

Table D-57

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: Iowa
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	2	1,381	.25%	.06%	+105%	+147%	+138%	+228%	+270%	+281%
Over 5%-10%	40	57,046	11	4	+123	+12[illegible]	+[illegible]30	+131	+138	+142
Over 10%-15%	82	141,697	26	16	+61	+64	+68	+67	+67	+68
Over 15%-20%	86	123,417	23	19	+11	+9	+3	+11	+13	+14
Over 20%-25%	71	63,015	12	13	-27	-25	-24	-25	-22	-19
Over 25%-30%	42	56,868	10	14	-16	-14	-14	-17	-21	-22
Over 30%-35%	30	26,577	5	8	-50	-49	-47	-48	-46	-44
Over 35%-40%	21	53,171	10	17	-11	-14	-15	-21	-24	-29
Over 40%-45%	13	8,982	2	3	-63	-64	-61	-62	-61	-60
Over 45%	13	9,602	2	5	-65	-67	-68	-67	-67	-66

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*Sums do not always total 100%, due to rounding.

Table D-58

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Formula: New Mexico
(Percentage Change in Number of Children Scoring Below Selected
Test-Score Cutoff Points; by Orshansky Index*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	8	6,133	2 %	0%	+233%	+322%	+394%	+422%	+410%	+374%
Over 5%-10%	3	1,136	0.4	0	+49	0	+47	+55	+88	+102
Over 10%-15%	4	1,590	0.6	0	-65	-6	+4	+51	+45	+79
Over 15%-20%	9	30,967	12	7	+10	+14	+13	+22	+22	+31
Over 20%-25%	6	95,715	36	27	+11	+9	+10	+10	+8	+6
Over 25%-30%	15	75,139	29	29	-6	-4	-1	-1	+1	+4
Over 30%-35%	2	3,097	1	1	+57	+29	+28	+19	+22	+20
Over 35%-40%	10	16,691	6	9	-57	-53	-52	-49	-47	-46
Over 40%-45%	7	7,998	3	5	-10	0	+2	0	+3	0
Over 45%	17	24,790	9	21	+12	8	0	-3	-7	-10

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*Sums do not always total 100%, due to rounding.

Table D-59

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: New Mexico
(Percentage Change in Number of Children Scoring Below Selected
Test-Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	12	7,590	3%	0%	+150%	+190%	+252%	+280%	+287%	+296%
Over 5%-10%	12	25,756	10	6	+11	+24	+24	+37	+37	+45
Over 10%-15%	19	150,304	57	45	+9	+9	+10	+11	+11	+11
Over 15%-20%	16	39,274	15	18	-10	-9	-9	-9	-7	-4
Over 20%-25%	7	13,424	5	7	-43	-40	-38	-40	-40	-43
Over 25%-30%	6	6,643	3	5	-33	-29	-24	-26	-24	-25
Over 30%-35%	3	13,220	5	12	+20	+12	+4	0	-3	-10
Over 35%-40%	2	1,455	0.5	1	-53	-54	-48	-45	-46	-43
Over 40%-45%	2	4,113	2	4	+7	+6	-7	-9	-14	-14
Over 45%	2	1,477	0.6	2	-33	-40	-33	-41	-45	-46

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*Sums do not always total 100%, due to rounding.

Table D-60

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: New Mexico
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	10	7,069	3 %	0%	+204%	+267%	+336%	+364%	+361%	+343%
Over 5%-10%	1	200	0.07	0	+446	+226	+439	+434	+558	+536
Over 10%-15%	12	22,533	9	5	+6	+19	+16	+30	+31	+41
Over 15%-20%	9	130,744	50	39	+4	+3	+5	+6	+6	+6
Over 20%-25%	16	50,750	19	21	+4	+7	+7	+5	+7	+9
Over 25%-30%	11	22,074	8	11	-36	-34	-33	-33	-31	-31
Over 30%-35%	5	4,823	2	3	-44	-36	-27	-23	-22	-24
Over 35%-40%	4	2,831	1	2	-21	-11	-14	-25	-22	-19
Over 40%-45%	2	12,319	5	9	+44	+33	+23	+17	+14	+4
Over 45%	11	9,913	4	10	-18	-20	-23	-24	-28	-27

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*Sums do not always total 100%, due to rounding.

Table D-61

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: New Mexico
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever" Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	6	5,824	2 %	0.1%	+86%	+150 %	+250%	+279 %	+259%	+247%
Over 5%-10%	5	1,445	0.5	0.2	+149	+139	+146	+151	+182	+169
Over 10%-15%	0									
Over 15%-20%	11	23,258	9	6	+2	+11	+7	+18	+19	+28
Over 20%-25%	8	106,661	41	31	+11	+10	+11	+11	+10	+8
Over 25%-30%	12	57,318	22	22	-2	-0.5	+2	+1	+5	+6
Over 30%-35%	7	21,086	8	9	-23	-25	-21	-20	-17	-13
Over 35%-40%	8	15,375	6	8	-49	-41	-41	-41	-40	-39
Over 40%-45%	5	6,170	2	4	-32	-25	-18	-14	-13	-17
Over 45%	19	26,119	10	21	+17	+12	+5	+0.7	-2	-6

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*Sums do not always total 100%, due to rounding.

Table D-62

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: New Mexico
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll- ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	6	5,824	2 %	0%	+68%	+125%	+215%	+242%	+224%	+213%
Over 5%-10%	4	604	0.2	0	+543	+547	+536	+529	+601	+524
Over 10%-15%	0			0						
Over 15%-20%	1	841	0.3	0	-61	-74	-61	-54	-46	-32
Over 20%-25%	10	11,752	4	3	+4	+15	+14	+25	+26	+33
Over 25%-30%	6	109,298	42	33	-3	-4	-3	-2	-3	-3
Over 30%-35%	7	36,902	14	13	+26	+26	+25	+23	+24	+24
Over 35%-40%	10	34,337	13	14	-26	-23	-19	-15	-12	-9
Over 40%-45%	5	16,101	6	7	+10	+7	+9	+6	+7	+9
Over 45%	32	47,597	18	30	0	0	-4	-7	-8	-10

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*Sums do not always total 100%, due to rounding.

Table D-63

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: Alabama
(Number of Children Scoring Below Selected
Test-Score Cutoff Points, by Orshansky Index)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below Orshansky Index	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	4	11,725	389	4	9	13	19	24	34
Over 5%-10%	4	8,102	516	19	31	45	63	80	98
Over 10%-15%	9	60,594	7,735	185	305	430	585	747	915
Over 15%-20%	8	21,285	3,536	59	106	155	217	280	335
Over 20%-25%	18	128,824	28,328	535	935	1,322	1,747	2,233	2,724
Over 25%-30%	16	99,768	27,363	509	848	1,184	1,586	1,987	2,355
Over 30%-35%	16	108,171	35,213	639	1,073	1,502	2,024	2,544	3,009
Over 35%-40%	14	217,315	80,265	1,586	2,506	3,425	4,477	5,468	6,406
Over 40%-45%	7	35,109	14,735	267	442	616	786	982	1,138
Over 45%	29	114,139	73,519	1,152	1,793	2,434	3,095	3,735	4,273

Table D-64

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: Alabama

(Number of Children Scoring Below Selected
Test-Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $3,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	7	18,116	491	16	29	43	63	81	104
Over 5%-10%	17	79,772	6,160	242	408	580	797	1,023	1,243
Over 10%-15%	32	227,677	28,968	1,015	1,770	2,511	3,347	4,242	5,098
Over 15%-20%	27	155,262	27,377	909	1,487	2,060	2,779	3,434	4,094
Over 20%-25%	12	206,568	43,698	1,596	2,521	3,445	4,447	5,476	6,380
Over 25%-30%	6	21,943	5,759	150	258	362	482	601	661
Over 30%-35%	5	25,149	7,955	229	351	472	608	746	866
Over 35%-40%	8	29,253	10,809	259	422	584	746	882	1,042
Over 40%-45%	3	16,222	7,005	192	296	402	507	617	707
Over 45%	8	25,070	13,260	347	506	667	823	978	1,092

Table D-65

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: Alabama
(Number of Children Scoring Below Selected
Test-Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $4,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	5	14,786	488	4	12	20	29	38	51
Over 5%-10%	6	13,045	1,076	39	64	90	123	158	191
Over 15%-20%	13	69,473	7,757	211	353	502	691	885	1,082
Over 15%-20%	20	151,744	26,355	591	1,045	1,485	1,984	2,544	3,086
Over 20%-25%	21	121,630	27,588	746	1,219	1,691	2,224	2,757	3,269
Over 25%-30%	21	273,750	76,750	1,915	3,060	4,199	5,533	6,799	7,964
Over 30%-35%	10	47,133	15,161	295	496	697	917	1,150	1,358
Over 35%-40%	4	15,338	5,851	120	207	291	373	470	511
Over 40%-45%	3	15,709	6,545	103	167	230	316	402	473
Over 45%	22	82,424	47,637	931	1,425	1,921	2,409	2,877	3,302

Table D-66

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: Alabama
(Number of Children Scoring Below Selected
Test-Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $5,000	Test Score Definition of "Low Achiever" Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	3	9,125	355	2	5	7	11	14	17
Over 5%-10%	4	8,991	577	14	24	36	52	67	87
Over 10%-15%	10	62,459	8,392	192	316	443	600	764	936
Over 15%-20%	6	17,198	3,012	52	95	140	201	262	311
Over 20%-25%	11	96,243	21,577	393	668	947	1,264	1,585	1,913
Over 25%-30%	19	104,312	28,659	494	836	1,160	1,526	1,949	2,352
Over 30%-35%	18	101,494	33,076	626	1,071	1,515	2,015	2,514	2,967
Over 35%-40%	16	248,357	92,338	1,756	2,786	3,812	4,998	6,122	7,172
Over 40%-45%	8	38,968	16,129	242	396	549	737	936	1,108
Over 45%	30	117,885	75,659	1,184	1,851	2,517	3,195	3,867	4,424

Table D-67

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income under $6,000: Alabama
(Number of Children Scoring Below Selected
Test-Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $6,000	Test Score Definition of "Low Achiever" Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	1	3,090	79	2	5	7	9	10	12
Over 5%-10%	4	11,696	794	2	7	13	20	28	39
Over 10%-15%	3	5,041	595	19	28	38	53	66	81
Over 15%-20%	9	60,748	10,811	185	305	428	581	741	908
Over 20%-25%	5	15,875	3,614	50	91	134	188	241	288
Over 25%-30%	7	70,440	20,128	291	484	678	896	1,118	1,343
Over 30%-35%	13	71,003	23,832	345	581	806	1,043	1,339	1,622
Over 35%-40%	13	72,382	27,994	370	634	894	1,206	1,521	1,802
Over 40%-45%	13	70,798	29,993	406	702	995	1,336	1,674	1,970
Over 45%	57	423,959	233,811	3,285	5,211	7,133	9,267	11,342	13,222

Table D-68

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Index: California
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Orshansky Poverty Index)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below Orshansky Index	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	277	720,838	24,598	2,874	4,441	6,376	8,329	10,663	12,763
Over 5%-10%	264	1,842,906	128,159	15,130	21,640	28,718	35,255	42,642	48,725
Over 10%-15%	214	871,019	108,696	7,368	10,651	14,398	17,678	21,349	24,447
Over 15%-20%	11[illegible]	567,750	95,782	5,207	7,459	9,829	11,892	14,229	16,201
Over 20%-25%	48	249,954	57,742	3,541	4,893	6,189	7,298	8,406	9,339
Over 25%-30%	35	131,724	36,003	1,513	2,189	2,842	3,410	4,301	4,502
Over 30%-35%	26	23,529	7,655	293	430	580	683	804	906
Over 35%-40%	14	21,975	8,235	280	384	501	595	693	771
Over 40%-45%	13	12,448	5,166	137	188	255	312	380	430
Over 45%	10	5,956	3,291	91	126	178	214	256	289

Table D-69

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: California
(Number of Children Scoring Below Selected
Test-Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $3,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	510	2,213,347	72,340	16,423	23,642	31,592	38,961	47,321	54,302
Over 5%-10%	350	1,735,598	126,759	13,819	20,098	27,154	33,502	40,708	46,864
Over 10%-15%	104	303,760	35,615	3,926	5,377	6,924	8,199	9,548	10,598
Over 15%-20%	37	179,359	28,384	2,113	3,065	3,905	4,658	5,454	6,123
Over 20%-25%	7	6,782	1,520	96	132	175	205	242	273
Over 25%-30%	4	8,071	2,197	50	74	100	122	156	182
Over 30%-35%	1	16	5	0	0	1	1	1	1
Over 35%-40%									
Over 40%-45%									
Over 45%	2	956	474	7	13	15	18	23	30

Table D-70

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: California
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $4,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	387	907,604	29,618	3,903	6,037	8,587	11,156	14,158	16,871
Over 5%-10%	328	2,124,304	142,070	18,247	26,029	34,539	42,234	50,984	58,171
Over 10%-15%	159	914,670	115,675	7,993	11,533	15,437	18,822	22,591	25,787
Over 15%-20%	75	270,400	46,412	3,643	4,974	6,359	7,544	8,773	9,744
Over 20%-25%	33	186,674	41,293	2,232	3,211	4,109	4,889	5,720	6,390
Over 25%-30%	13	20,203	5,338	181	278	385	477	570	658
Over 30%-35%	14	16,264	5,312	164	237	318	390	465	526
Over 35%-40%	3	7,007	2,584	64	89	117	136	169	196
Over 40%-45%									
Over 45%	3	973	661	7	13	15	18	23	30

Table D-71

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: California
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $5,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	230	492,583	16,842	2,008	3,081	4,414	5,739	7,315	8,726
Over 5%-10%	254	1,812,504	131,642	14,249	20,461	27,194	33,475	40,605	46,512
Over 10%-15%	216	824,537	100,611	6,846	9,899	13,401	16,499	20,213	22,963
Over 15%-20%	139	759,596	130,929	6,654	9,596	12,810	15,771	18,691	21,362
Over 20%-25%	74	289,833	64,922	3,517	4,832	6,175	7,361	8,566	9,536
Over 25%-30%	38	186,180	51,787	2,263	3,247	4,152	4,953	5,812	6,506
Over 30%-35%	25	41,970	13,739	443	628	827	986	1,161	1,304
Over 35%-40%	14	15,533	5,737	220	317	423	505	587	653
Over 40%-45%	12	17,540	7,687	139	203	291	363	452	518
Over 45%	13	7,823	4,458	95	137	179	214	251	293

Table D-72

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: California
(Number of Children Scoring Below Selected
Test Score Cutoff Points, By Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $6,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	178	287,869	9,969	1,201	1,841	2,642	3,463	4,397	5,220
Over 5%-10%	182	1,478,429	118,672	12,105	17,159	22,531	27,440	33,006	37,632
Over 10%-15%	179	841,276	107,213	5,533	8,214	11,400	14,393	17,848	20,804
Over 15%-20%	155	496,315	86,504	4,076	5,911	8,000	9,896	12,065	13,824
Over 20%-25%	114	720,844	161,589	6,104	8,857	11,830	14,398	17,307	19,822
Over 25%-30%	74	231,629	63,182	2,897	3,946	5,032	5,948	6,903	7,695
Over 30%-35%	48	214,957	69,750	2,444	3,492	4,517	5,448	6,405	7,190
Over 35%-40%	28	97,583	35,358	1,258	1,802	2,318	2,760	3,231	3,595
Over 40%-45%	18	37,517	16,035	301	460	628	755	908	1,031
Over 45%	41	41,680	23,552	515	719	968	1,165	1,383	1,560

Table D-73

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Index: Delaware
(Number of Children Scoring Below Selected
Test-Score Cutoff Points, by Orshansky Index)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below Orshansky Index	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	5	42,523		142	218	297	463	537	672
Over 5%-10%	5	27,947		213	298	385	524	600	732
Over 10%-15%	5	19,543		153	223	294	406	470	565
Over 15%-20%	5	23,339		289	412	512	637	704	812
Over 20%-25%	1	3,799		39	56	71	92	105	123
Over 25%-30%	0								
Over 30%-35%	0								
Over 35%-40%	1	15,129		366	482	587	705	771	850
Over 40%-45%	0								
Over 45%	0								

Table D-74

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: Delaware
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $3,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	10	66,460	1,869	335	487	647	931	1,073	1,322
Over 5%-10%	10	48,458	3,567	473	673	852	1,116	1,260	1,494
Over 10%-15%	1	2,233	234	28	47	60	75	83	88
Over 15%-20%	0	0	0	0	0	0	0	0	0
Over 20%-25%	1	15,129	3,026	366	482	587	705	771	850
Over 25%-30%	0	0	0	0	0	0	0	0	0
Over 30%-35%	0	0	0	0	0	0	0	0	0
Over 35%-40%	0	0	0	0	0	0	0	0	0
Over 40%-45%	0	0	0	0	0	0	0	0	0
Over 45%	0	0	0	0	0	0	0	0	0

Table D-75

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: Delaware
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $4,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	6	44,928	1,378	160	245	336	518	600	747
Over 5%-10%	9	45,085	3,454	348	494	640	875	1,007	1,222
Over 10%-15%	5	23,339	3,055	289	412	512	637	704	812
Over 15%-20%	1	3,799	626	39	56	71	92	105	123
Over 20%-25%	0								
Over 25%-30%	1	15,129	4,331	366	482	587	705	771	850
Over 30%-35%	0								
Over 35%-40%	0								
Over 40%-45%	0								
Over 45%	0								

Table D-76

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: Delaware
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $5,000	Test Score Definition of "Low Achiever" Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	4	26,484	904	33	60	87	158	186	246
Over 5%-10%	5	37,571	2,795	284	400	521	718	824	1,001
Over 10%-15%	6	25,958	3,118	191	279	368	517	597	722
Over 15%-20%	5	23,339	4,346	289	412	512	637	704	812
Over 20%-25%	1	3,799	844	39	56	71	92	105	123
Over 25%-30%	0								
Over 30%-35%	0								
Over 35%-40%	1	15,129	5,512	366	482	587	705	771	850
Over 40%-45%	0								
Over 45%	0								

Table D-77

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: Delaware
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $6,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	1	11,476	342	9	20	27	52	63	87
Over 5%-10%	5	32,219	2,481	222	313	407	571	652	779
Over 10%-15%	4	23,775	2,972	124	183	248	364	422	538
Over 15%-20%	4	11,497	2,124	115	163	217	281	326	387
Over 20%-25%	3	18,750	4,440	191	275	343	454	506	597
Over 25%-30%	3	12,635	3,452	136	197	246	308	342	393
Over 30%-35%	1	3,799	1,226	39	56	71	92	105	123
Over 35%-40%	0								
Over 40%-45%	0								
Over 45%	1	15,129	7,285	366	482	587	705	771	850

Table D-78

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Formula: Iowa
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Orshansky Index)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below Orshansky Index	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	44	50,182	1,781	433	632	804	1,027	1,262	1,522
Over 5%-10%	144	211,066	15,471	2,049	2,974	3,660	4,569	5,470	6,524
Over 10%-15%	99	122,314	15,220	1,209	1,685	1,914	2,519	3,026	3,614
Over 15%-20%	62	56,208	9,808	547	788	969	1,190	1,442	1,744
Over 20%-25%	29	83,010	19,043	1,295	1,816	2,201	2,563	2,835	3,168
Over 25%-30%	12	8,413	2,297	81	110	128	158	191	228
Over 30%-35%	9	6,304	2,225	52	68	87	100	129	165
Over 35%-40%	3	2,458	919	18	24	31	43	50	61
Over 40%-45%	1	228	102	4	6	7	9	9	11
Over 45%	2	1,073	521	14	17	20	24	27	35

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ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: Iowa
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $3,000	Test Score Definition of "Low Achiever" Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	182	257,670	8,401	2,474	3,571	4,420	5,532	6,643	7,954
Over 5%-10%	146	168,892	12,121	1,658	2,334	2,705	3,496	4,211	5,024
Over 10%-15%	54	102,710	12,688	1,451	2,047	2,482	2,913	3,271	3,703
Over 15%-20%	14	8,412	1,420	89	125	160	197	237	285
Over 20%-25%	6	2,562	570	22	32	39	44	53	68
Over 25%-30%	3	1,510	423	8	11	15	20	26	38
Over 30%-35%	0								
Over 35%-40%	0								
Over 40%-45%	0								
Over 45%	0								

Table D-80

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: Iowa
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $4,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	81	83,853	2,920	762	1,100	1,379	1,762	2,062	2,510
Over 5%-10%	159	243,100	17,001	2,421	3,478	4,131	5,296	6,414	7,591
Over 10%-15%	87	100,798	12,202	962	1,355	1,651	2,021	2,444	2,968
Over 15%-20%	44	93,730	17,022	1,380	1,946	2,359	2,751	3,064	3,431
Over 20%-25%	21	13,860	3,057	121	166	206	256	319	396
Over 25%-30%	7	3,744	1,026	27	38	52	63	79	102
Over 30%-35%	3	1,223	387	19	22	24	27	30	36
Over 35%-40%	3	1,448	525	10	15	19	26	29	38
Over 40%-45%	0								
Over 45%	0								

Table D-81

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: Iowa
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $5,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	27	29,924	1,164	227	346	437	576	722	876
Over 5%-10%	97	166,184	13,043	1,623	2,346	2,899	3,635	4,342	5,190
Over 10%-15%	118	150,773	18,722	1,522	2,140	2,477	3,214	3,848	4,580
Over 15%-20%	74	66,800	11,361	626	899	1,103	1,364	1,649	1,985
Over 20%-25%	45	60,185	13,166	693	999	1,226	1,457	1,661	1,956
Over 25%-30%	20	53,866	14,556	894	1,233	1,483	1,713	1,921	2,112
Over 30%-35%	14	8,306	2,680	60	81	101	127	162	203
Over 35%-40%	5	3,393	1,270	31	43	57	68	83	104
Over 40%-45%	2	1,024	432	8	10	11	15	17	20
Over 45%	3	1,301	650	18	23	27	33	36	46

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ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: Iowa
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $6,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	2	1,381	66	7	12	14	24	32	39
Over 5%-10%	40	57,046	4,402	508	718	901	1,127	1,373	1,650
Over 10%-15%	82	141,697	17,645	1,474	2,139	2,637	3,273	3,871	4,585
Over 15%-20%	86	123,417	21,240	1,218	1,705	1,948	2,602	3,148	3,749
Over 20%-25%	71	63,015	14,280	537	787	967	1,191	1,459	1,784
Over 25%-30%	42	56,868	15,727	684	994	1,207	1,450	1,625	1,904
Over 30%-35%	30	26,577	8,761	229	329	416	509	622	760
Over 35%-40%	21	53,171	19,044	879	1,209	1,451	1,676	1,889	2,091
Over 40%-45%	13	8,982	3,841	74	102	134	163	197	238
Over 45%	18	9,602	5,133	92	125	146	187	225	272

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ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Formula: Massachusetts
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Orshansky Index)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below Orshansky Index	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	130	394,793	12,956	4,645	6,263	7,352	8,668	9,423	10,228
Over 5%-10%	121	510,344	36,277	8,404	10,765	12,262	13,978	14,908	15,972
Over 10%-15%	39	133,756	16,030	2,554	3,253	3,684	4,170	4,416	4,704
Over 15%-20%	14	110,047	19,210	2,643	3,326	3,701	4,110	4,318	4,564
Over 20%-25%	13	49,391	10,582	1,340	1,643	1,792	1,970	2,073	2,162
Over 25%-30%	1	586	154	27	32	34	37	39	40
Over 30%-35%	1	230	79	6	6	7	8	8	9
Over 35%-40%	0								
Over 40%-45%	1	126	54	1	3	3	4	4	4
Over 45%	0								

Table D-84

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: Massachusetts
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $3,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	229	818,369	24,053	11,621	15,142	17,435	20,113	21,614	23,294
Over 5%-10%	72	325,341	22,218	6,545	8,341	9,420	10,647	11,273	11,982
Over 10%-15%	16	54,629	6,372	1,438	1,788	1,958	2,158	2,274	2,378
Over 15%-20%	1	578	95	9	11	12	15	16	16
Over 20%-25%	1	126	30	1	3	3	4	4	4
Over 25%-30%	1	230	63	6	6	7	8	8	9
Over 30%-35%	0								
Over 35%-40%	0								
Over 40%-45%	0								
Over 45%	0								

Table D-85

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: Massachusetts
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $4,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	170	581,101	20,303	8,187	10,615	12,208	14,086	15,142	16,256
Over 5%-10%	105	385,418	27,186	6,081	7,911	9,103	10,468	11,205	12,098
Over 10%-15%	27	178,700	22,326	3,921	4,991	5,582	6,252	6,591	6,978
Over 15%-20%	15	53,112	9,434	1,397	1,733	1,898	2,090	2,200	2,298
Over 20%-25%	1	586	124	27	32	34	37	39	40
Over 25%-30%	0								
Over 30%-35%	1	126	44	1	3	3	4	4	4
Over 35%-40%	1	230	82	6	6	7	8	8	0
Over 40%-45%	0								
Over 45%	0								

Table D-86

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: Massachusetts
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $5,000	Test Score Definition of "Low Achiever" Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	107	291,407	9,858	3,548	4,764	5,565	6,537	7,119	7,707
Over 5%-10%	122	507,589	36,188	7,633	9,844	11,266	12,920	13,800	14,857
Over 10%-15%	55	217,556	26,877	4,001	5,122	5,836	6,625	7,040	7,494
Over 15%-20%	17	90,606	16,055	2,027	2,582	2,898	3,268	3,449	3,662
Over 20%-25%	14	73,603	16,015	1,935	2,380	2,608	2,863	3,005	3,150
Over 25%-30%	3	18,156	4,664	469	590	652	720	764	800
Over 30%-35%	0								
Over 35%-40%	0								
Over 40%-45%	1	230	97	6	6	7	8	8	9
Over 45%	1	126	59	1	3	3	4	4	4

Table D-87

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: Massachusetts
(Number of Children Scoring Below Selected
Test-Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $6,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	54	129,976	4,110	1,305	1,816	2,157	2,577	2,815	3,056
Over 5%-10%	125	501,662	38,121	7,536	9,666	11,061	12,696	13,619	14,625
Over 10%-15%	62	215,443	26,875	3,012	3,997	4,635	5,378	5,782	6,290
Over 15%-20%	40	126,383	21,634	2,346	3,004	3,432	3,894	4,135	4,388
Over 20%-25%	14	89,306	19,317	1,961	2,480	2,762	3,100	3,277	3,473
Over 25%-30%	12	95,820	25,266	2,344	2,954	3,292	3,656	3,827	4,044
Over 30%-35%	10	39,741	13,106	1,082	1,333	1,452	1,595	1,683	1,754
Over 35%-40%	1	586	220	27	32	34	37	39	40
Over 40%-45%	0								
Over 45%	2	356	209	7	9	10	12	12	13

Table D-88

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Formula: New Mexico
(Number of Children Scoring Below Selected
Test-Score Cutoff Points, by Orshansky Index)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below Orshansky Index	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	8	6,133	105	9	17	27	36	40	44
Over 5%-10%	3	1,136	78	3	3	6	8	11	14
Over 10%-15%	4	1,590	222	2	8	12	22	24	35
Over 15%-20%	9	30,967	5,531	156	241	324	442	502	640
Over 20%-25%	6	95,715	19,617	559	819	1,123	1,413	1,585	1,828
Over 25%-30%	15	75,139	20,699	502	762	1,061	1,339	1,563	1,896
Over 30%-35%	2	3,097	990	40	49	66	77	90	105
Over 35%-40%	10	16,691	6,369	70	114	158	212	250	303
Over 40%-45%	7	7,998	3,427	79	131	182	225	262	301
Over 45%	17	24,790	14,928	428	610	780	947	1,040	1,181

Table D-89

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: New Mexico
(Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $3,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	12	7,590	97	12	20	33	45	52	63
Over 5%-10%	12	25,756	2,343	124	207	281	391	445	556
Over 10%-15%	19	150,304	17,273	901	1,332	1,837	2,326	2,652	3,141
Over 15%-20%	16	39,274	6,840	294	444	600	755	882	1,073
Over 20%-25%	7	13,424	2,849	78	122	170	209	237	268
Over 25%-30%	6	6,643	1,797	57	91	132	161	189	221
Over 30%-35%	3	13,220	4,490	256	356	451	547	602	658
Over 35%-40%	2	1,455	579	13	19	29	39	43	54
Over 40%-45%	2	4,113	1,708	87	128	153	189	203	241
Over 45%	2	1,477	815	26	35	53	59	62	72

Table D-90

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: New Mexico
(Number of Children Scoring Below Selected
Test-Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $4,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	10	7,069	98	10	18	29	39	44	50
Over 5%-10%	1	200	11	2	2	4	5	7	8
Over 10%-15%	12	22,533	2,807	100	167	221	314	359	458
Over 15%-20%	9	130,744	21,221	744	1,095	1,517	1,931	2,189	2,586
Over 20%-25%	16	50,750	11,273	396	602	820	1,017	1,180	1,420
Over 25%-30%	11	22,074	6,081	131	201	277	351	410	484
Over 30%-35%	5	4,823	1,602	30	51	80	106	122	141
Over 35%-40%	4	2,831	1,097	29	49	64	71	84	103
Over 40%-45%	2	12,319	5,207	252	347	434	525	580	628
Over 45%	11	9,913	5,568	154	222	293	362	392	469

Table D-91

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: New Mexico
(Number of Children Scoring Below Selected
Test-Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $5,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	6	5,824	106	5	10	19	26	28	32
Over 5%-10%	5	1,445	111	7	10	14	18	23	26
Over 10%-15%	0								
Over 15%-20%	11	23,258	4,174	108	174	228	318	364	463
Over 20%-25%	8	106,661	22,391	631	929	1,276	1,611	1,802	2,106
Over 25%-30%	12	57,318	16,053	399	602	835	1,050	1,233	1,483
Over 30%-35%	7	21,086	6,662	130	188	269	346	406	506
Over 35%-40%	8	15,375	5,770	74	127	174	210	256	305
Over 40%-45%	5	6,170	2,574	44	73	108	143	164	185
Over 45%	19	26,119	15,214	450	641	816	990	1,091	1,241

Table D-92

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: New Mexico
(Number of Children Scoring Below Selected
Test-Score Cutoff Points, by Family Income)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Number of Children From Families Whose Income is Below $6,000	Test Score Definition of "Low Achiever"					
				Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	6	5,824	152	5	10	19	26	28	32
Over 5%-10%	4	604	47	6	9	12	15	19	20
Over 10%-15%	0								
Over 15%-20%	1	841	130	1	1	2	3	4	6
Over 20%-25%	10	11,752	2,828	58	95	128	178	204	253
Over 25%-30%	6	109,298	30,642	587	862	1,182	1,505	1,691	2,008
Over 30%-35%	7	36,902	12,257	303	452	610	758	871	1,028
Over 35%-40%	10	34,337	12,990	189	294	421	553	653	802
Over 40%-45%	5	16,101	6,556	142	206	285	350	402	481
Over 45%	32	47,597	28,419	557	825	1,080	1,333	1,495	1,717

Table D-93

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Formula: Alabama
(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Orshansky Index*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	4	11,725	1%	0%	0%	0%	0%	0%	0%	0%
Over 5%-10%	4	8,102	1	0	0	0	0	0	0	0
Over 10%-15%	9	60,594	8	3	4	4	4	4	4	4
Over 15%-20%	8	21,285	3	1	1	1	1	1	2	2
Over 20%-25%	18	128,824	16	10	11	12	12	12	12	13
Over 25%-30%	16	99,768	12	10	10	11	11	11	11	11
Over 30%-35%	16	108,171	13	13	13	13	13	14	14	14
Over 35%-40%	14	217,315	27	30	32	31	31	31	30	30
Over 40%-45%	7	35,109	4	5	5	5	6	5	5	5
Over 45%	29	114,139	14	27	23	22	22	21	21	20

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[*] Sums do not always total 100%, due to rounding.

Table D-94

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: Alabama
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of District	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever" Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	7	18,116	2%	0%	0%	0%	0%	0%	0%	0%
Over 5%-10%	17	79,772	10	4	5	5	5	5	6	6
Over 10%-15%	32	227,677	28	19	20	22	23	23	23	24
Over 15%-20%	27	155,262	19	18	18	18	19	19	19	19
Over 20%-25%	12	206,568	26	29	32	31	31	30	30	30
Over 25%-30%	6	21,943	3	4	3	3	3	3	3	3
Over 30%-35%	5	25,149	3	5	5	4	4	4	4	4
Over 35%-40%	8	29,253	4	7	5	5	5	5	5	5
Over 40%-45%	3	16,222	2	5	4	4	4	3	3	3
Over 45%	8	25,070	3	9	7	6	6	6	5	5

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*Sums do not always total 100%, due to rounding.

Table D-95

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: Alabama

(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	5	14,786	2%	0%	0%	0%	0%	0%	0%	0%
Over 5%-10%	6	13,045	2	1	1	1	1	1	1	1
Over 10%-15%	13	69,473	9	4	4	4	5	5	5	5
Over 15%-20%	20	151,744	19	12	12	13	13	14	14	14
Over 20%-25%	21	121,630	15	13	15	15	15	15	15	15
Over 25%-30%	21	273,750	34	36	39	38	38	38	38	38
Over 30%-35%	10	47,133	6	7	6	6	6	6	6	6
Over 35%-40%	4	15,338	2	3	2	3	3	3	3	2
Over 40%-45%	3	15,709	2	3	2	2	2	2	2	2
Over 45%	22	82,424	10	22	19	18	17	17	16	16

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*Sums do not always total 100%, due to rounding.

Table D-96

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: Alabama
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	3	9,125	1%	0%	0%	0%	0%	0%	0%	0%
Over 5%-10%	4	8,991	1	0	0	0	0	0	0	0
Over 10%-15%	10	62,459	8	3	4	4	4	4	4	4
Over 15%-20%	6	17,198	2	1	1	1	1	1	1	1
Over 20%-25%	11	96,243	12	8	8	8	9	9	9	9
Over 25%-30%	19	104,312	13	10	10	10	10	10	11	11
Over 30%-35%	18	101,494	13	12	13	13	14	14	14	14
Over 35%-40%	16	248,357	31	33	35	35	34	34	34	34
Over 40%-45%	8	38,968	5	6	5	5	5	5	5	5
Over 45%	30	117,885	15	27	24	23	23	22	21	21

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[*] Sums do not always total 100%, due to rounding.

Table D-97

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: Alabama
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	1	3,090	0.38%	0%	0%	0%	0%	0%	0%	0%
Over 5%-10%	4	11,696	1	0	0	0	0	0	0	0
Over 10%-15%	3	5,041	0.6	0	0	0	0	0	0	0
Over 15%-20%	9	60,748	8	3	4	4	4	4	4	4
Over 20%-25%	5	15,875	2	1	1	1	1	1	1	1
Over 25%-30%	7	70,440	9	6	6	6	6	6	6	6
Over 30%-35%	13	71,003	9	7	7	7	7	7	7	8
Over 35%-40%	13	72,382	9	8	7	8	8	8	8	8
Over 40%-45%	13	70,798	9	9	8	9	9	9	9	9
Over 45%	57	423,959	53	66	66	65	64	63	63	62

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*Sums do not always total 100%, due to rounding.

Table D-98

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Formula: California

(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Orshansky Index*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	277	720,838		5%	8%	8%	9%	10%	10%	11%
Over 5%-10%	264	1,842,906		27	42	41	41	41	41	41
Over 10%-15%	214	871,019		23	20	20	21	21	21	21
Over 15%-20%	114	567,750		20	14	14	14	14	14	14
Over 20%-25%	48	249,954		12	10	9	9	9	8	8
Over 25%-30%	35	131,724		8	4	4	4	4	4	4
Over 30%-35%	26	23,529		2	1	1	1	1	1	1
Over 35%-40%	14	21,975		2	1	1	1	1	1	1
Over 40%-45%	13	12,448		1						
Over 45%	10	5,956		1						

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*Sums do not always total 100%, due to rounding.

Table D-99

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: California
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	510	2,213,547		27%	45%	45%	45%	45%	46%	46%
Over 5%-10%	350	1,735,598		47	38	38	39	39	39	40
Over 10%-15%	104	303,760		13	11	10	10	10	9	9
Over 15%-20%	37	179,359		11	6	6	6	5	5	5
Over 20%-25%	7	6,782		1						
Over 25%-30%	4	8,071		1						
Over 30%-35%	1	16		0						
Over 35%-40%										
Over 40%-45%										
Over 45%	2	966		0						

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*Sums do not always total 100%, due to rounding.

Table D-100

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: California

(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	387	907,604		8%	11%	12%	12%	13%	14%	14%
Over 5%-10%	328	2,124,304		37	50	50	49	49	49	49
Over 10%-15%	159	914,670		30	22	22	22	22	22	22
Over 15%-20%	75	270,400		12	10	9	9	9	8	8
Over 20%-25%	33	186,674		11	6	6	6	6	6	5
Over 25%-30%	13	20,203		1	0	1	1	1	1	1
Over 30%-35%	14	16,264		1	0	0	0	0	0	0
Over 35%-40%	3	7,007		1	0	0	0	0	0	0
Over 40%-45%										
Over 45%	3	973		0	0	0	0	0	0	0

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*Sums do not always total 100%, due to rounding.

Table D-101

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: California
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	230	492,583		3%	6%	6%	6%	7%	7%	7%
Over 5%-10%	254	1,812,504		25	39	39	39	39	39	39
Over 10%-15%	216	824,537		19	19	19	19	19	19	19
Over 15%-20%	139	759,596		25	18	18	18	18	18	18
Over 20%-25%	74	289,833		12	10	9	9	9	8	8
Over 25%-30%	38	186,180		10	6	6	6	6	6	5
Over 30%-35%	25	41,970		3	1	1	1	1	1	1
Over 35%-40%	14	15,533		1	1	1	1	1	1	1
Over 40%-45%	12	17,540		1						
Over 45%	13	7,823		1						

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*Sums do not always total 100%, due to rounding.

Table D-102

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: California
(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	176	287,869		1%	3%	4%	4%	4%	4%	4%
Over 5%-10%	182	1,478,429		17	33	33	32	32	32	32
Over 10%-15%	179	841,276		15	15	16	16	17	17	18
Over 15%-20%	155	496,315		13	11	11	11	12	12	12
Over 20%-25%	114	720,844		23	17	17	17	17	17	17
Over 25%-30%	74	231,629		9	8	8	7	7	7	7
Over 30%-35%	48	214,957		10	7	7	6	6	6	6
Over 35%-40%	28	97,583		5	3	3	3	3	3	3
Over 40%-45%	18	37,517		2	1	1	1	1	1	1
Over 45%	41	41,680		3	1	1	1	1	1	1

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*Sums do not always total 100%, due to rounding.

Table D-103

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Formula: Delaware
(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Orshansky Index*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	5	42,523	32%	8%	12%	13%	14%	16%	17%	18%
Over 5%-10%	5	27,947	21	13	18	18	18	19	19	19
Over 10%-15%	5	19,543	15	15	13	13	14	14	15	15
Over 15%-20%	5	23,339	18	25	24	24	24	23	22	22
Over 20%-25%	1	3,799	3	5	3	3	3	3	3	
Over 25%-30%	0									
Over 30%-35%	0									
Over 35%-40%	1	15,129	11	34	30	29	27	25	24	23
Over 40%-45%	0									
Over 45%	0									

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*Sums do not always total 100%, due to rounding.

Table D-104

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: Delaware
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	10	66,460	50%	21%	28%	29%	30%	33%	34%	35%
Over 5%-10%	10	48,458	37	41	39	40	40	39	40	40
Over 10%-15%	1	2,233	2	3	2	3	3	3	3	2
Over 15%-20%	0									
Over 20%-25%	1	15,129	11	35	30	29	27	25	24	23
Over 25%-30%	0									
Over 30%-35%	0									
Over 35%-40%	0									
Over 40%-45%	0									
Over 45%	0									

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*Sums do not always total 100%, due to rounding.

Table D-105

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: Delaware
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	6	44,928	34%	11%	13%	15%	16%	18%	19%	20%
Over 5%-10%	9	45,085	34	27	29	29	30	31	32	33
Over 10%-15%	5	23,339	18	24	24	24	24	23	22	22
Over 15%-20%	1	3,799	3	5	3	3	3	3	3	3
Over 20%-25%	0									
Over 25%-30%	1	15,129	11	34	30	29	27	25	24	23
Over 30%-35%	0									
Over 35%-40%	0									
Over 40%-45%	0									
Over 45%	0									

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*Sums do not always total 100%, due to rounding.

Table D-106

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: Delaware
(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	4	26,484	20%	5%	3%	4%	4%	6%	6%	7%
Over 5%-10%	5	37,571	28	16	24	24	24	25	26	27
Over 10%-15%	6	25,958	20	18	16	17	17	18	19	19
Over 15%-20%	5	23,339	18	25	24	24	24	23	22	22
Over 20%-25%	1	3,799	3	5	3	3	3	3	3	3
Over 25%-30%	0									
Over 30%-35%	0									
Over 35%-40%	1	15,129	11	31	30	29	27	25	24	23
Over 40%-45%	0									
Over 45%	0									

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*Sums do not always total 100%, due to rounding.

Table D-107

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: Delaware
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	1	11,476	9%	1%	1%	1%	1%	2%	2%	2%
Over 5%-10%	5	35,219	27	10	18	19	19	20	20	21
Over 10%-15%	4	23,775	18	12	10	11	12	13	13	14
Over 15%-20%	4	11,497	9	9	10	10	10	10	10	10
Over 20%-25%	3	18,750	14	18	16	16	16	16	16	16
Over 25%-30%	3	12,635	10	14	11	12	11	11	11	10
Over 30%-35%	1	3,799	3	5	3	3	3	3	3	3
Over 35%-40%	0									
Over 40%-45%	0									
Over 45%	1	15,129	11	30	30	29	27	25	24	23

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*Sums do not always total 100%, due to rounding.

Table D-108

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Formula: Iowa
(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Orshansky Index*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	44	50,182	9 %	3%	8%	8%	[illegible]%	8%	9%	9%
Over 5%-10%	144	211,066	39	23	36	37	37	37	38	38
Over 10%-15%	99	122,314	23	23	21	21	19	21	21	21
Over 15%-20%	62	56,208	10	15	10	10	10	10	10	10
Over 20%-25%	29	83,010	15	28	23	22	22	21	20	19
Over 25%-30%	12	8,413	2	3	1	1	1	1	1	1
Over 30%-35%	9	6,804	1	3	1	1	1	1	1	1
Over 35%-40%	3	2,458	0.4	1	0	0	0	0	0	0
Over 40%-45%	1	228	0.04	0	0	0	0	0	0	0
Over 45%	2	1,073	0.2	1	0	0	0	0	0	0

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*Sums do not always total 100%, due to rounding.

Table D-109

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: Iowa
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	182	257,670	48 %	24%	43%	44%	45%	45%	46%	47%
Over 5%-10%	146	168,892	31	34	29	29	28	29	29	29
Over 10%-15%	54	102,710	19	36	25	25	25	24	23	22
Over 15%-20%	14	8,412	2	4	2	2	2	2	2	2
Over 20%-25%	6	2,562	0.47	2	0	0	0	0	0	0
Over 25%-30%	3	1,510	0.28	1	0	0	0	0	0	0
Over 30%-35%	0									
Over 35%-40%	0									
Over 40%-45%	0									
Over 45%	0									

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*Sums do not always total 100%, due to rounding.

Table D-110

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: Iowa
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	81	83,853	15 %	5 %	13%	14%	14%	14%	14%	15%
Over 5%-10%	159	243,100	45	31	42	43	42	43	44	44
Over 10%-15%	87	100,798	19	23	17	17	17	17	17	17
Over 15%-20%	44	93,730	17	31	24	24	24	23	21	20
Over 20%-25%	21	13,860	3	6	2	2	2	2	2	2
Over 25%-30%	7	3,744	0.7	2	0	0	1	1	1	1
Over 30%-35%	3	1,223	0.2	0.7	0	0	0	0	0	0
Over 35%-40%	3	1,448	0.3	1	0	0	0	0	0	0
Over 40%-45%	0									
Over 45%	0									

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*Sums do not always total 100%, due to rounding.

Table D-111

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: Iowa
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	27	29,924	6 %	2%	4%	4%	4%	5%	5%	5%
Over 5%-10%	97	166,184	31	17	28	29	30	30	30	30
Over 10%-15%	118	150,773	28	24	27	26	25	26	27	27
Over 15%-20%	74	66,800	12	15	11	11	11	11	11	12
Over 20%-25%	45	60,185	11	17	12	12	12	12	12	11
Over 25%-30%	20	53,866	10	19	16	15	15	14	13	12
Over 30%-35%	14	8,306	2	3	1	1	1	1	1	1
Over 35%-40%	5	3,393	0.6	2	1	1	1	1	1	1
Over 40%-45%	2	1,024	0.19	1	0	0	0	0	0	0
Over 45%	3	1,301	0.24	1	0	0	0	0	0	0

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*Sums do not always total 100%, due to rounding.

Table D-112

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: Iowa

(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enrollment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	2	1,381	0.25%	0.06%	0%	0%	0%	0%	0%	0%
Over 5%-10%	40	57,046	11	4	9	9	9	9	10	10
Over 10%-15%	82	141,697	26	16	26	26	27	27	27	27
Over 15%-20%	86	123,417	23	19	21	21	20	21	22	22
Over 20%-25%	71	63,105	12	13	9	10	10	10	10	10
Over 25%-30%	42	56,868	10	14	12	12	12	12	11	11
Over 30%-35%	30	26,577	5	8	4	4	4	4	4	4
Over 35%-40%	21	53,171	10	17	15	15	15	14	13	12
Over 40%-45%	13	8,982	2	3	1	1	1	1	1	1
Over 45%	18	9,602	2	5	2	2	1	2	2	2

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*Sums do not always total 100%, due to rounding.

Table D-113

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Formula: Massachusetts
(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Orshansky Index*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	130	394,793	33 %	14 %	24%	25%	25%	26%	27%	27%
Over 5%-10%	121	510,344	43	38	43	43	43	42	42	42
Over 10%-15%	39	133,756	11	17	13	13	13	13	13	12
Over 15%-20%	14	110,047	9	20	13	13	13	12	12	12
Over 20%-25%	13	49,391	4	11	7	6	6	6	6	6
Over 25%-30%	1	586	0.05	0.2	0	0	0	0	0	0
Over 30%-35%	1	230	0.02	0.08	0	0	0	0	0	0
Over 35%-40%	0									
Over 40%-45%	1	126	0.01	0.06						
Over 45%	0									

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*Sums do not always total 100%, due to rounding.

Table D-114

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000: Massachusetts
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	229	818,369	68 %	46 %	59%	60%	60%	61%	61%	62%
Over 5%-10%	72	325,341	27	42	33	33	33	32	32	32
Over 10%-15%	16	54,629	5	12	7	7	7	7	6	6
Over 15%-20%	1	578	0.05	0.18						
Over 20%-25%	1	126	0.01	0.06						
Over 25%-30%	1	230	0.02	0.12						
Over 30%-35%	0									
Over 35%-40%	0									
Over 40%-45%	0									
Over 45%	0									

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*Sums do not always total 100%, due to rounding.

Table D-115

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000: Massachusetts
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	170	581,101	48 %	26%	42%	42%	42%	43%	43%	43%
Over 5%-10%	105	385,418	32	34	31	31	32	32	32	32
Over 10%-15%	27	178,700	15	28	20	20	19	19	19	19
Over 15%-20%	15	53,112	4	12	7	7	7	6	6	6
Over 20%-25%	1	586	0.04	0	0	0	0	0	0	0
Over 25%-30%	0									
Over 30%-35%	1	126	0.01	0	0	0	0	0	0	0
Over 35%-40%	1	230	0.02	0	0	0	0	0	0	0
Over 40%-45%	0									
Over 45%	0									

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*Sums do not always total 100%, due to rounding.

Table D-116

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000: Massachusetts
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	107	291,407	24 %	9%	18%	19%	19%	20%	20%	20%
Over 5%-10%	122	507,589	42	33	39	39	39	39	39	39
Over 10%-15%	55	217,556	18	24	20	20	20	20	20	20
Over 15%-20%	17	90,606	8	15	10	10	10	10	10	10
Over 20%-25%	14	73,603	6	15	10	9	9	9	9	8
Over 25%-30%	3	18,156	2	4	2	2	2	2	2	2
Over 30%-35%	0									
Over 35%-40%	0									
Over 40%-45%	1	230	0.02	0	0	0	0	0	0	0
Over 45%	1	126	0.01	0	0	0	0	0	0	0

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*Sums do not always total 100%, due to rounding.

Table D-117

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000: Massachusetts
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever" Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	54	129,976	11 %	3%	7%	7%	7%	8%	8%	8%
Over 5%-10%	125	501,662	42	26	38	38	38	39	39	39
Over 10%-15%	62	215,443	18	18	15	16	16	16	16	17
Over 15%-20%	40	126,383	11	15	12	12	12	12	12	12
Over 20%-25%	14	89,306	7	13	10	10	10	9	9	9
Over 25%-30%	12	95,820	8	17	12	12	11	11	11	11
Over 30%-35%	10	39,741	3	9	6	5	5	5	5	5
Over 35%-40%	1	586	0.05	0	0	0	0	0	0	0
Over 40%-45%	0									
Over 45%	2	356	0.03	0	0	0	0	0	0	0

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*Sums do not always total 100%, due to rounding.

Table D-118

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Orshansky Poverty Formula: New Mexico
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Orshansky Index*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	8	6,133	2 %	0%	0%	1%	1%	1%	1%	1%
Over 5%-10%	3	1,136	0.4	0	0	0	0	0	0	0
Over 10%-15%	4	1,590	0.6	0	0	0	0	0	0	0
Over 15%-20%	9	30,967	12	8	8	9	9	9	9	10
Over 20%-25%	6	95,715	36	27	30	30	30	30	30	29
Over 25%-30%	15	[illegible]5,139	29	29	27	28	28	28	29	30
Over 30%-35%	2	3,097	1	1	2	2	2	2	2	2
Over 35%-40%	10	16,691	6	9	4	4	4	4	5	5
Over 40%-45%	7	7,998	3	5	4	5	5	5	5	5
Over 45%	17	24,790	9	21	23	22	21	20	19	19

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*Sums do not always total 100%, due to rounding.

Table D-119

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $3,000--New Mexico

(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	12	7,590	3 %	0%	1%	1%	1%	1%	1%	1%
Over 5%-10%	12	25,756	10	6	7	8	8	8	8	9
Over 10%-15%	19	150,304	57	45	49	48	49	49	49	49
Over 15%-20%	16	39,274	15	18	16	16	15	16	16	17
Over 20%-25%	7	13,424	5	7	4	4	5	4	4	4
Over 25%-30%	6	6,643	3	5	3	3	4	3	4	3
Over 30%-35%	3	13,220	5	12	14	13	12	12	11	10
Over 35%-40%	2	1,455	5	1	1	1	1	1	1	1
Over 40%-45%	2	4,113	2	4	5	5	4	4	4	4
Over 45%	2	1,477	0.6	2	1	1	1	1	1	1

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*Sums do not always total 100%, due to rounding.

Table D-120

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $4,000--New Mexico
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of. State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	10	7,069	3 %	0%	1%	1%	1%	1%	1%	1%
Over 5%-10%	1	200	0.07	0	0	0	0	0	0	0
Over 10%-15%	12	22,533	9	5	5	6	6	7	7	7
Over 15%-20%	9	130,744	50	39	40	40	41	41	41	41
Over 20%-25%	16	50,750	19	21	21	22	22	22	22	22
Over 25%-30%	11	22,074	8	11	7	7	7	7	8	8
Over 30%-35%	5	4,823	2	3	2	2	2	2	2	2
Over 35%-40%	4	2,831	1	2	2	2	2	2	2	2
Over 40%-45%	2	12,319	5	9	14	13	12	11	11	10
Over 45%	11	9,913	4	10	8	8	8	8	7	7

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*Sums do not always total 100%, due to rounding.

Table D-121

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $5,000--New Mexico
(Percentage Change in Number of Children Scoring Below Selected
Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever"					
					Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	6	5,824	2 %	0%	0%	0%	1%	1%	1%	1%
Over 5%-10%	5	1,445	0.5	0	0	0	0	0	0	0
Over 10%-15%	0									
Over 15%-20%	11	23,258	9	6	6	6	6	7	7	7
Over 20%-25%	8	106,661	41	31	34	34	34	34	34	33
Over 25%-30%	12	57,318	22	22	22	22	22	22	23	23
Over 30%-35%	7	21,086	8	9	7	7	7	7	8	8
Over 35%-40%	8	15,375	6	8	4	5	5	5	5	5
Over 40%-45%	5	6,170	2	4	2	3	3	3	3	3
Over 45%	19	26,119	10	21	24	23	22	21	20	20

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*Sums do not always total 100%, due to rounding.

Table D-122

ANALYSIS OF ALTERNATIVE POVERTY CRITERIA

Family Income Under $6,000--New Mexico
(Percentage Change in Number of Children Scoring Below Selected Test Score Cutoff Points, by Family Income*)

Degree of Poverty Impactedness	Number of Districts	Total Enrollment	Percent of State's Enroll-ment	Percent of State's Poor Children	Test Score Definition of "Low Achiever" Bottom 10%	Bottom 15%	Bottom 20%	Bottom 25%	Bottom 30%	Bottom 35%
5% or less	6	5,824	2 %	0%	0%	0%	1%	1%	1%	1%
Over 5%-10%	4	604	0.22	0	0	0	0	0	0	0
Over 10%-15%	0			0						
Over 15%-20%	1	841	0.3	0	0	0	0	0	0	0
Over 20%-25%	10	11,752	4	3	3	3	3	4	4	4
Over 25%-30%	6	109,298	42	33	32	31	32	32	32	32
Over 30%-35%	7	36,902	14	13	16	16	16	16	16	16
Over 35%-40%	10	34,337	13	14	10	11	11	12	12	13
Over 40%-45%	5	16,101	6	7	8	7	8	7	7	8
Over 45%	32	47,597	18	30	30	30	29	28	28	27

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*Sums do not always total 100%, due to rounding.

Table D-123

ANALYSIS OF INTERSTATE SHIFTS IN PROPORTION OF TITLE I CHILDREN WHEN CURRENT DEFINITION OF POVERTY IS CONTRASTED WITH ALTERNATIVE CRITERIA

ROCKY MOUNTAINS REGION

NUMBER OF CHILDREN CLASSIFIED AS POOR BY DIFFERENT CRITERIA

			Children from families whose income is less than...		
State	Number of Title I Children	Number of Orshansky Children	Number of $3,000. Children	Number of $4,000. Children	Number of $5,000. Children
Colorado	64,559	71,254	39,618	57,238	79,641
Idaho	12,772	23,716	12,009	18,726	27,195
Montana	14,208	24,998	13,831	20,577	28,711
Utah	26,746	30,796	16,438	24,448	32,639
Wyoming	5,934	10,054	5,408	7,904	11,428
Total for Rocky Mtn. Region	124,219	160,818	87,304	128,893	179,614

Table D-124

ANALYSIS OF INTERSTATE SHIFTS IN PROPORTION OF TITLE I CHILDREN WHEN CURRENT DEFINITION OF POVERTY IS CONTRASTED WITH ALTERNATIVE CRITERIA

GREAT LAKES REGION

NUMBER OF CHILDREN CLASSIFIED AS POOR BY DIFFERENT CRITERIA

State	Number of Title I Children	Number of Orshansky Children	Children from families whose income is less than... Number of $3,000. Children	Number of $4,000. Children	Number of $5,000. Children
Illinois	416,031	302,311	163,013	245,072	329,706
Indiana	94,238	123,484	66,780	98,553	139,438
Michigan	317,417	220,485	126,146	179,282	237,162
Ohio	265,208	273,542	162,993	228,475	301,955
Wisconsin	93,079	103,895	56,441	84,361	115,536
Total for Great Lakes Region	1,185,973	1,023,717	575,373	835,743	1,123,797

Table D-125

ANALYSIS OF INTERSTATE SHIFTS IN PROPORTION OF TITLE I CHILDREN WHEN CURRENT DEFINITION OF POVERTY IS CONTRASTED WITH ALTERNATIVE CRITERIA

MIDEAST REGION

NUMBER OF CHILDREN CLASSIFIED AS POOR BY DIFFERENT CRITERIA

Children from families whose income is less than....

State	Number of Title I Children	Number of Orshansky Children	Number of $3,000. Children	Number of $4,000. Children	Number of $5,000. Children
New Jersey	246,715	155,690	86,145	128,969	179,648
New York	806,092	526,402	292,498	434,158	591,406
Pennsylvania	367,777	304,815	160,892	243,605	341,857
Delaware	12,189	17,372	8,951	13,219	18,114
Maryland	116,065	116,951	66,735	94,072	125,879
D.C.	53,950	37,193	20,178	29,130	39,890
Total for Mideast Region	1,602,788	1,158,423	635,399	943,153	1,296,794

Table D-126

ANALYSIS OF INTERSTATE SHIFTS IN PROPORTION OF TITLE I CHILDREN WHEN CURRENT DEFINITION OF POVERTY IS CONTRASTED WITH ALTERNATIVE CRITERIA

NEW ENGLAND REGION

NUMBER OF CHILDREN CLASSIFIED AS POOR BY DIFFERENT CRITERIA

Children from families whose income is less than....

State	Number of Title I Children	Number of Orshansky Children	Number of $3,000. Children	Number of $4,000. Children	Number of $5,000. Children
Connecticut	75,850	55,083	32,918	46,794	62,826
Maine	33,456	36,308	16,489	25,913	39,236
Massachusetts	172,617	116,900	64,045	96,985	134,167
New Hampshire	14,047	14,286	7,392	11,354	16,516
Rhode Island	28,028	24,482	13,857	20,178	27,002
Vermont	10,203	13,062	5,627	9,162	13,853
Total for New England Region	334,201	260,121	140,328	210,386	293,600

Table D-127

ANALYSIS OF INTERSTATE SHIFTS IN PROPORTION OF TITLE I CHILDREN WHEN CURRENT DEFINITION OF POVERTY IS CONTRASTED WITH ALTERNATIVE CRITERIA

PACIFIC REGION

NUMBER OF CHILDREN CLASSIFIED AS POOR BY DIFFERENT CRITERIA

			Children from families whose income is less than....		
State	Number of Title I Children	Number of Orshansky Children	Number of $3,000. Children	Number of $4,000. Children	Number of $5,000. Children
Alaska	9,862	12,393	6,456	8,897	11,826
California	752,195	595,765	331,209	488,880	661,052
Hawaii	23,289	19,465	10,384	14,810	20,329
Nevada	6,865	10,890	6,417	9,474	13,433
Oregon	47,725	53,953	31,382	45,635	62,936
Washington	91,654	80,172	45,577	68,977	92,980
Total for Pacific Region	931,590	772,638	431,425	636,673	862,556

Table D-128

ANALYSIS OF INTERSTATE SHIFTS IN PROPORTION OF TITLE I CHILDREN WHEN CURRENT DEFINITION OF POVERTY IS CONTRASTED WITH ALTERNATIVE CRITERIA

PLAINS REGION

NUMBER OF CHILDREN CLASSIFIED AS POOR BY DIFFERENT CRITERIA

STATE	Number of Title I Children	Number of Orshansky Children	Children from families whose income is less than... Number of $3,000. Children	Number of $4,000. Children	Number of $5,000. Children
Iowa	52,711	72,000	37,850	58,515	84,308
Kansas	50,477	64,621	34,770	52,283	74,297
Minnesota	82,665	98,936	51,491	79,617	114,539
Missouri	101,115	172,955	95,193	142,468	194,762
Nebraska	29,410	45,952	25,413	38,040	54,918
N. Dakota	13,566	27,354	12,899	21,389	31,211
S. Dakota	18,739	33,815	18,095	27,933	38,420
Total for Plains Region	348,683	515,633	275,711	420,245	592,455

Table D-129

ANALYSIS OF INTERSTATE SHIFTS IN PROPORTION OF TITLE I CHILDREN WHEN CURRENT DEFINITION OF POVERTY IS CONTRASTED WITH ALTERNATIVE CRITERIA

SOUTHEAST REGION

Number of Children Classified as Poor by Different Criteria

State	Number of Title I Children	Number of Orshansky Children	Children from families whose income is less than.... Number of $3,000. Children	Number of $4,000. Children	Number of $5,000. Children
Alabama	105,370	272,146	151,759	215,674	280,085
Arkansas	54,245	155,135	86,114	126,090	165,889
Florida	144,601	299,575	162,886	239,999	326,513
Georgia	142,022	293,871	155,733	230,147	307,483
Kentucky	106,359	208,462	120,390	173,743	226,321
Louisiana	140,631	308,850	178,552	246,566	311,436
Mississippi	100,232	261,679	152,715	213,222	265,059
N. Carolina	129,658	312,545	166,805	246,608	339,081
S. Carolina	81,935	206,985	111,118	159,165	210,889
Tennessee	85,254	245,157	133,221	199,308	268,781
Virginia	127,205	214,357	111,847	167,405	229,493
West Virginia	61,934	106,359	60,468	87,417	114,309
Total for Southeast Region	1,279,446	2,885,121	1,591,608	2,305,344	3,045,339

Table D-130

ANALYSIS OF INTERSTATE SHIFTS IN PROPORTION OF TITLE I CHILDREN WHEN CURRENT DEFINITION OF POVERTY IS CONTRASTED WITH ALTERNATIVE CRITERIA

SOUTHWEST REGION

Number of Children Classified as Poor by Different Criteria

			Children from families whose income is less than....		
State	Number of Title I Children	Number of Orshansky Children	Number of $3,000. Children	Number of $4,000. Children	Number of $5,000. Children
Arizona	50,292	84,014	46,092	65,085	86,606
New Mexico	40,748	80,559	43,763	61,645	81,417
Oklahoma	66,348	122,548	66,465	101,189	138,118
Texas	282,817	636,776	318,420	482,082	657,156
Total for Southwest Region	440,205	923,897	474,740	710,001	963,297

Table D-131

ALABAMA

DOUBLE-COUNT, SIMULATION I

SUM OF PRESENT TITLE I CHILDREN AND LOW ACHIEVING CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	7	18,746	.58%	2.63%	353.45%
5+ - 10%	48	316,320	23.66%	106.29%	349.24%
10+ - 15%	36	224,683	26.65%	100.53%	277.22%
15+ - 20%	14	162,735	25.49%	90.27%	254.14%
20+ - 25%	7	33,280	7.42%	23.08%	211.05%
25+ - 30%	5	18,683	4.84%	13.55%	170.96%
30+ - 35%	2	11,253	3.70%	9.17%	147.84%
35+ - 40%	2	6,885	2.45%	6.28%	156.33%
40+ - 45%	3	9,556	3.84%	9.12%	137.50%
Over 45%	1	2,891	1.36%	3.07%	125.74%
Totals	125	805,032	100.00%	364.00%	264.00%

Table D-132

CALIFORNIA

DOUBLE-COUNT, SIMULATION I

SUM OF PRESENT TITLE I CHILDREN AND LOW ACHIEVING CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	264	845,290	4.26%	15.52%	264.32%
5+ - 10%	280	1,183,474	14.46%	40.34%	178.98%
10+ - 15%	186	648,390	12.20%	29.34%	140.49%
15+ - 20%	116	386,324	10.79%	23.62%	118.91%
20+ - 25%	78	420,615	14.93%	28.61%	91.63%
25+ - 30%	53	738,534	30.28%	61.23%	102.21%
30+ - 35%	12	106,540	5.38%	9.40%	74.72%
35+ - 40%	10	70,587	4.16%	7.21%	73.32%
40+ - 45%	9	8,562	.59%	.95%	61.02%
Over 45%	7	39,783	2.95%	6.36%	115.59%
Totals	1,015	4,448,099	100.00%	222.57%	122.57%

Table D-133

DELAWARE

DOUBLE-COUNT, SIMULATION I

SUM OF PRESENT TITLE I CHILDREN AND LOW ACHIEVING CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	6	49,311	5.03%	17.96%	256.80%
5+ - 10%	5	31,933	13.56%	26.76%	97.39%
10+ - 15%	1	3,095	2.00%	4.28%	113.94%
15+ - 20%	5	16,076	17.16%	31.34%	82.58%
20+ - 25%	4	16,736	23.63%	38.84%	64.37%
25+ - 30%	--	--	--	--	--
30+ - 35%	--	--	--	--	--
35+ - 40%	--	--	--	--	--
40+ - 45%	1	15,129	38.62%	63.92%	65.53%
Over 45%	--	--	--	--	--
Totals	22	132,280	100.00%	183.10%	83.10%

Table D-134

IOWA

DOUBLE-COUNT, SIMULATION I

SUM OF PRESENT TITLE I CHILDREN AND LOW ACHIEVING CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	3	7,125	.38%	1.22%	221.05%
5+ - 10%	41	55,235	5.04%	11.97%	137.50%
10+ - 15%	154	194,116	30.47%	56.07%	84.02%
15+ - 20%	149	182,987	37.30%	61.12%	63.86%
20+ - 25%	45	90,203	22.66%	39.99%	76.48%
25+ - 30%	9	9,097	2.89%	4.28%	48.10%
30+ - 35%	2	1,327	.51%	.63%	23.53%
35+ - 40%	2	1,666	.74%	1.00%	35.14%
40+ - 45%	C	0		--	
Over 45%	0	0		--	
Totals	405	541,756	100.00%	176.28%	76.28%

Table D-135

MASSACHUSETTS

DOUBLE-COUNT, SIMULATION I

SUM OF PRESENT TITLE I CHILDREN AND LOW ACHIEVING CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change of Funding
0 - 5%	121	320,245	6.44%	19.85%	208.23%
5+ - 10%	111	342,516	14.51%	33.79%	132.87%
10+ - 15%	49	176,048	12.46%	24.25%	94.62%
15+ - 20%	25	89,521	9.36%	16.26%	73.72%
20+ - 25%	2	31,058	3.72%	6.24%	67.74%
25+ - 30%	7	111,003	18.90%	30.16%	59.58%
30+ - 35%	4	32,074	6.06%	9.11%	50.33%
35+ - 40%	0				
40+ - 45%	0				
Over 45%	1	96,808	28.55%	37.56%	31.56%
Totals	320	1,102,465	100.00%	139.66%	39.66%

Table D-136

NEW MEXICO

DOUBLE-COUNT, SIMULATION I

SUM OF PRESENT TITLE I CHILDREN AND LOW ACHIEVING CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	12	7,787	.19%	1.29%	578.95%
5+ - 10%	13	32,452	6.87%	16.12%	134.64%
10+ - 15%	20	146,964	47.13%	97.25%	106.34%
15+ - 20%	14	41,345	19.12%	35.93%	87.92%
20+ - 25%	7	10,831	6.40%	10.95%	71.09%
25+ - 30%	6	4,710	3.39%	6.83%	101.47%
30+ - 35%	4	16,392	13.61%	31.71%	132.99%
35+ - 40%	1	866	.84%	1.19%	41.67%
40+ - 45%	1	170	.19%	.23%	21.05%
Over 45%	3	1,739	2.26%	3.72%	64.60%
Totals	81	263,256	100.00%	205.22%	105.22%

Table D-137

ALABAMA

DOUBLE-COUNT, SIMULATION II

SUM OF ORSHANSKY CHILDREN AND LOW ACHIEVING CHILDREN

Percentage of Orshansky Students in District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
0 - 5%	3	9,125	.12%	.20%	69.06%
5+ - 10%	1	1,711	.04%	.18%	319.48%
10+ - 15%	10	62,859	2.93%	7.20%	145.90%
15+ - 20%	8	20,772	1.27%	2.66%	109.34%
20+ - 25%	20	133,591	10.78%	24.13%	123.80%
25+ - 30%	16	99,768	10.01%	21.23%	111.95%
30+ - 35%	17	110,643	13.17%	27.82%	111.20%
35+ - 40%	14	217,315	29.38%	59.87%	103.81%
40+ - 45%	7	35,109	5.39%	10.81%	100.46%
over 45%	29	114,139	26.91%	47.25%	75.60%
Totals	125	805,032	100.00%	201.35%	101.35%

Table D-138

CALIFORNIA

DOUBLE-COUNT, SIMULATION II

SUM OF ORSHANSKY CHILDREN AND LOW ACHIEVING CHILDREN

Percentage of Orshansky Students in District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
0 - 5%	262	658,771	4.70%	16.84%	258.30%
5+ - 10%	274	1,936,762	28.28%	97.99%	246.50%
10+ - 15%	215	839,171	22.05%	53.40%	142.18%
15+ - 20%	111	567,676	20.13%	42.88%	113.02%
20+ - 25%	55	249,655	12.12%	26.60%	119.47%
25+ - 30%	36	132,286	7.60%	14.29%	88.03%
30+ - 35%	24	23,256	1.59%	2.91%	83.02%
35+ - 40%	15	22,118	1.74%	2.90%	66.67%
40+ - 45%	13	12,448	1.09%	1.65%	51.38%
over 45%	10	5,956	.69%	1.08%	56.52%
Totals	1,015	4,448,099	100.00%	260.54%	160.54%

Table D-139

DELAWARE

DOUBLE-COUNT, SIMULATION II

SUM OF ORSHANSKY CHILDREN AND LOW ACHIEVING CHILDREN

Percentage of Orshansky Students in District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
0 - 5%	5	42,523	8.50%	17.85%	110.00%
5+ - 10%	5	27,947	13.36%	27.39%	105.01%
10+ - 15%	5	19,543	14.90%	24.98%	67.65%
15+ - 20%	5	23,339	24.70%	43.73%	77.04%
20+ - 25%	1	3,799	4.58%	7.15%	56.11%
25+ - 30%	0				
30+ - 35%	0				
35+ - 40%	1	15,129	33.97%	58.07%	70.94%
40+ - 45%	0				
over 45%	0				
Totals	22	132,280	100.00%	179.16%	79.16%

Table D-140

IOWA

DOUBLE-COUNT, SIMULATION II

SUM OF ORSHANSKY CHILDREN AND LOW ACHIEVING CHILDREN

Percentage of Orshansky Students in District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
0 - 5%	44	50,182	2.56%	9.46%	269.10%
5+ - 10%	144	211,066	22.27%	54.90%	146.56%
10+ - 15%	97	121,710	21.85%	41.02%	87.78%
15+ - 20%	60	54,838	13.99%	22.50%	60.78%
20+ - 25%	28	40,427	12.88%	20.89%	62.22%
25+ - 30%	15	52,319	20.68%	34.78%	68.15%
30+ - 35%	9	6,929	3.25%	4.12%	26.98%
35+ - 40%	5	2,984	1.61%	1.94%	20.81%
40+ - 45%	0				
over 45%	3	1,301	.91%	1.20%	31.41%
Totals	405	541,756	100.00%	190.81%	90.81%

Table D-141

MASSACHUSETTS

DOUBLE-COUNT, SIMULATION II

SUM OF ORSHANSKY CHILDREN AND LOW ACHIEVING CHILDREN

Percentage of Orshansky Students in District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
0 - 5%	142	403,250	13.88%	47.29%	240.83%
5+ - 10%	119	506,531	38.18%	96.43%	152.54%
10+ - 15%	40	132,752	16.90%	34.84%	106.15%
15+ - 20%	12	109,423	20.26%	38.66%	90.81%
20+ - 25%	6	47,087	10.70%	19.70%	84.16%
25+ - 30%	0				
30+ - 35%	1	230	0.08%	0.13%	50.04%
35+ - 40%	0				
40+ - 45%	0				
over 45%	0				
Totals	320	1,199,273	100.00%	237.04%	137.04%

Table D-142

NEW MEXICO

DOUBLE-COUNT, SIMULATION II

SUM OF ORSHANSKY CHILDREN AND LOW ACHIEVING CHILDREN

Percentage of Orshansky Students in District	Number of District	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
0 - 5%	6	5,824	.13%	.33%	149.03%
5+ - 10%	4	1,245	.13%	.28%	123.43%
10+ - 15%	3	1,279	.24%	.35%	49.68%
15+ - 20%	6	30,323	7.50%	12.15%	61.95%
20+ - 25%	10	96,736	27.44%	43.51%	58.58%
25+ - 30%	15	75,074	28.57%	43.51%	52.29%
30+ - 35%	2	3,097	1.37%	2.32%	69.97%
35+ - 40%	8	16,313	8.61%	10.80%	25.39%
40+ - 45%	7	8,067	4.77%	7.33%	53.63%
over 45%	20	25,298	21.24%	33.20%	56.26%
Totals	81	263,256	100.00%	153.78%	53.78%

Table D-143

ALABAMA

SIMULATION I

ANALYSIS BY PERCENTAGE OF CHILDREN WHO CURRENTLY QUALIFY AS TITLE I FORMULA CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	7	18,746	.58%	2.09%	258.56%
5+ - 10%	48	316,320	23.66%	82.67%	249.39%
10+ - 15%	36	224,683	26.65%	73.89%	177.31%
15+ - 20%	14	162,735	25.49%	65.02%	155.04%
20+ - 25%	7	33,280	7.42%	15.65%	110.86%
25+ - 30%	5	18,683	4.84%	8.69%	79.46%
30+ - 35%	2	11,253	3.70%	5.47%	47.92%
35+ - 40%	2	6,885	2.45%	3.83%	56.21%
40+ - 45%	3	9,556	3.84%	5.28%	37.64%
Over 45%	1	2,891	1.36%	1.72%	26.53%
Totals	125	805,032	100%	264.31%	164.31

Table D-144

ALABAMA

SIMULATION II

ANALYSIS OF SHIFTS BY PERCENTAGE OF CHILDREN LIVING IN DISTRICT WHO QUALIFY AS ORSHANSKY CHILDREN

Percentage of Orshansky Students In District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
0 - 5%	3	9,125	.12	.13	8.33
5+ - 10%	1	1,711	.04	.13	225.00
10+ - 15%	10	62,859	2.93	4.33	47.78
15+ - 20%	8	20,772	1.27	1.54	21.25
20+ - 25%	20	133,591	10.78	13.60	26.15
25+ - 30%	16	99,768	10.01	11.81	17.98
30+ - 35%	17	110,643	13.17	15.41	17.00
35+ - 40%	14	217,315	29.38	32.21	9.63
40+ - 45%	7	35,109	5.39	5.86	8.71
Over 45%	29	114,139	26.91	27.00	.33
Totals	125	805,032	100%	112.04	12.04

Table D-145

ALABAMA

SIMULATION III

ANALYSIS BY PERCENTAGE OF CHILDREN WHO CURRENTLY QUALIFY AS TITLE I FORMULA CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	7	18,746	.58%	1.78%	205.88%
5+ - 10%	48	316,320	23.66%	81.88%	246.07%
10+ - 15%	36	224,683	26.65%	73.76%	176.83%
15+ - 20%	14	162,735	25.49%	65.02%	155.04%
20+ - 25%	7	33,280	7.42%	15.65%	110.86%
25+ - 30%	5	18,683	4.84%	8.69%	79.46%
30+ - 35%	2	11,253	3.70%	5.47%	47.92%
35+ - 40%	2	6,885	2.45%	3.83%	56.21%
40+ - 45%	3	9,556	3.84%	5.28%	37.64%
Over 45%	1	2,891	1.36%	1.72%	26.53%
Totals	125	805,032	100%	263.10%	163.10%

Table D-146

ALABAMA

SIMULATION IV

ANALYSIS OF SHIFTS BY PERCENTAGE OF CHILDREN LIVING IN DISTRICT WHO QUALIFY AS ORSHANSKY CHILDREN

Percentage of Orshansky Students In District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
0 - 5%	3	9,125	.12	.12	0
5+ - 10%	1	1,711	.04	.13	225.00
10+ - 15%	10	62,859	2.93	4.33	47.78
15+ - 20%	8	20,772	1.27	1.54	21.25
20+ - 25%	20	133,591	10.78	13.60	26.15
25+ - 30%	16	99,768	10.01	11.81	17.98
30+ - 35%	17	110,643	13.17	15.41	17.00
35+ - 40%	14	217,315	29.38	32.21	9.63
40+ - 45%	7	35,109	5.39	5.86	8.80
Over 45%	29	114,139	26.91	27.00	.33
Totals	125	805,032	100%	112.03	12.03

Table D-147

CALIFORNIA

SIMULATION I

ANALYSIS OF SHIFTS BY PERCENTAGE OF CHILDREN WHO CURRENTLY QUALIFY AS TITLE I FORMULA CHILDREN

Percentage of Present Title I Students in District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent, New Children are of Present Title I Children in State	Change in Funding
0 — 5%	264	845,290	4.26%	11.34%	166.45%
5+—10%	280	1,183,474	14.46%	26.15%	80.85%
10+—15%	186	648,390	12.20%	17.45%	42.98%
15+—20%	116	386,324	10.79%	13.79%	27.89%
20+—25%	78	420,615	14.93%	16.12%	8.02%
25+—30%	53	738,534	30.28%	31.53%	4.13%
30+—35%	12	106,540	5.38%	5.38%	.02%
35+—40%	10	70,587	4.16%	4.19%	.62%
40+—45%	9	8,562	.59%	.59%	0
Over 45%	7	39,783	2.95%	3.46%	17.33%
Totals	1,015	4,448,099	100.00%	130.00%	

Table D-148

CALIFORNIA

SIMULATION II

ANALYSIS OF SHIFTS BY PERCENTAGE OF CHILDREN LIVING IN DISTRICT WHO QUALIFY AS ORSHANSKY CHILDREN

Percentage of Orshansky Students In District	Number of Districts	Total Enrollment	Percent of State's Orshansky Children	Percent New Children are of Orshansky Children	Change in Funding
0 - 5%	262	658,771	4.70	6.41	36.31
5+ - 10%	274	1,936,762	28.28	64.03	126.45
10+ - 15%	215	839,171	22.05	31.15	41.25
15+ - 20%	111	567,676	20.13	25.56	26.96
20+ - 25%	55	249,655	12.12	15.17	25.12
25+ - 30%	36	132,286	7.60	7.94	4.44
30+ - 35%	24	23,256	1.59	1.72	7.66
35+ - 40%	15	22,118	1.74	1.81	3.88
40+ - 45%	13	12,448	1.09	1.11	2.63
Over 45%	10	5,956	.69	.69	.08
Totals	1,015	4,448,099	100%	155.59	55.59

Table D-149

CALIFORNIA

SIMULATION III

ANALYSIS OF SHIFTS BY PERCENTAGE OF CHILDREN WHO CURRENTLY QUALIFY AS TITLE I FORMULA CHILDREN

Percentage of Present Title I Students in District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	264	845,290	4.26%	5.84%	37.29%
5+ - 10%	280	1,183,474	14.46%	21.48%	48.56%
10+ - 15%	186	648,390	12.20%	16.70%	36.87%
15+ - 20%	116	386,324	10.79%	13.79%	27.88%
20+ - 25%	78	420,615	14.93%	16.12%	8.02%
25+ - 30%	53	738,534	30.28%	31.53%	4.13%
30+ - 35%	12	106,540	5.38%	5.38%	.02%
35+ - 40%	10	70,587	4.16%	4.19%	.62%
40+ - 45%	9	8,562	.59%	.59%	0
Over 45%	7	39,783	2.95%	3.46%	17.33%
Totals	1,015	4,448,099	100.00%	119.10%	

Table D-150

CALIFORNIA

SIMULATION IV

ANALYSIS OF SHIFTS BY PERCENTAGE OF CHILDREN LIVING IN DISTRICT WHO QUALIFY AS ORSHANSKY CHILDREN

Percentage of Orshansky Students In District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children are of Old Children	Change in Funding
0 - 5%	262	658,771	4.70	12.33	162.07
5+ - 10%	274	1,936,762	28.28	70.36	148.82
10+ - 15%	215	839,171	22.05	32.11	45.63
15+ - 20%	111	567,676	20.13	25.56	26.96
20+ - 25%	55	249,655	12.12	15.17	25.12
25+ - 30%	36	132,286	7.60	7.94	4.44
30+ - 35%	24	23,256	1.59	1.72	7.66
35+ - 40%	15	22,118	1.74	1.81	3.88
40+ - 45%	13	12,448	1.09	1.11	2.63
Over 45%	10	5,956	.69	.69	.08
Totals	1,015	4,448,099	100%	168.80	68.80

Table D-151

DELAWARE

SIMULATION I

ANALYSIS BY PERCENTAGE OF CHILDREN WHO CURRENTLY QUALIFY AS TITLE I FORMULA CHILDREN

Percentage of Present Title I Students in District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	6	49,311	5.03	12.93	156.80
5+ - 10%	5	31,933	13.56	15.34	13.16
10+ - 15%	1	3,095	2.00	2.28	13.94
15+ - 20%	5	16,076	17.16	19.02	10.85
20+ - 25%	4	16,736	23.63	23.63	0
25+ - 30%	0				
30+ - 35%	0				
35+ - 40%	0				
40+ - 45%	1	15,129	38.62	38.62	0
Over 45%					
Totals	22	132,280	100.00	111.82	11.82

Table D-152

DELAWARE

SIMULATION II

ANALYSIS OF SHIFTS BY PERCENTAGE OF CHILDREN LIVING IN DISTRICT WHO QUALIFY AS ORSHANSKY CHILDREN

Percentage of Orshansky Students In District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
0 - 5%	5	42,523	8.50	12.07	+42.00%
5+ - 10%	5	27,947	13.36	18.42	+37.87%
10+ - 15%	5	19,543	14.90	15.96	7.11
15+ - 20%	5	23,339	24.70	25.93	4.97
20+ - 25%	1	3,799	4.58	4.81	5.02
25+ - 30%					
30+ - 35%					
35+ - 40%	1	15,129	33.97	35.66	4.97
40+ - 45%					
Over 45%					
Totals	22	132,280	100.00%	112.84%	12.84%

Table D-153

DELAWARE

SIMULATION III

ANALYSIS BY PERCENTAGE OF CHILDREN WHO CURRENTLY QUALIFY AS TITLE I FORMULA CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	6	49,311	5.03	5.03	0
5+ - 10%	5	31,933	13.56	13.56	0
10+ - 15%	1	3,095	2.00	2.00	0
15+ - 20%	5	16,076	17.16	19.02	+10.85
20+ - 25%	4	16,736	23.63	23.63	0
25+ - 30%	0				
30+ - 35%	0				
35+ - 40%	0				
40+ - 45%	1	15,129	38.62	38.62	0
Over 45%					
Totals	22	132,280	100.00	101.86	1.86

Table D-154

DELAWARE

SIMULATION IV

ANALYSIS OF SHIFTS BY PERCENTAGE OF CHILDREN LIVING IN DISTRICT WHO QUALIFY AS ORSHANSKY CHILDREN

Percentage of Orshansky Students In District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
0 - 5%	5	42,523	8.50	8.92	+4.94%
5+ - 10%	5	27,947	13.36	18.42	+37.87%
10+ - 15%	5	19,543	14.90	15.64	+4.96%
15+ - 20%	5	23,339	24.70	25.93	+4.97%
20+ - 25%	1	3,799	4.58	4.81	+5.02%
25+ - 30%					
30+ - 35%					
35+ - 40%	1	15,129	33.97	35.66	+4.97
40+ - 45%					
Over 45%					
Totals	22	132,280	100.00%	109.38	9.38%

Table D-155

IOWA

SIMULATION I

ANALYSIS BY PERCENTAGE OF CHILDREN WHO CURRENTLY QUALIFY AS TITLE I FORMULA CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	3	7,125	.38%	.84%	122.79%
5+ - 10%	41	55,235	5.04%	7.46%	48.08%
10+ - 15%	154	194,116	30.47%	32.94%	8.09%
15+ - 20%	149	182,987	37.30%	37.72%	1.11%
20+ - 25%	45	90,203	22.66%	22.86%	.87%
25+ - 30%	9	9,097	2.89%	2.89%	0
30+ - 35%	2	1,327	.51%	.51%	0
35+ - 40%	2	1,666	.74%	.74%	0
40+ - 45%	0				
Over 45%	0				
Totals	405	541,756	100%	105.96%	5.96

Table D-156

IOWA

SIMULATION II

ANALYSIS OF SHIFTS BY PERCENTAGE OF CHILDREN LIVING IN DISTRICT WHO QUALIFY AS ORSHANSKY CHILDREN

Percentage of Orshansky Students In District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
0 - 5%	44	50,182	2.56	6.97	172.27
5+ - 10%	144	211,066	22.27	34.81	56.31
10+ - 15%	97	121,710	21.85	24.29	11.17
15+ - 20%	60	54,838	13.99	14.12	.92
20+ - 25%	28	40,427	12.88	12.88	0
25+ - 30%	15	52,319	20.68	20.68	0
30+ - 35%	9	6,929	3.25	3.25	0
35+ - 40%	5	2,984	1.61	1.61	0
40+ - 45%	0				
Over 45%	3	1,301	.91	.91	0
Totals	405	541,756	100.00	119.51	19.51

Table D-157

IOWA

SIMULATION III

ANALYSIS BY PERCENTAGE OF CHILDREN WHO CURRENTLY QUALIFY AS TITLE I FORMULA CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	3	7,125	.38%	.38%	0%
5+ - 10%	41	55,225	5.04%	6.39%	26.83%
10+ - 15%	154	194,116	30.47%	32.05%	5.18%
15+ - 20%	149	182,987	37.30%	37.72%	1.11%
20+ - 25%	45	90,203	22.66%	22.86%	.87%
25+ - 30%	9	9,097	2.89%	2.89%	0
30+ - 35%	2	1,327	.51%	.51%	0
35+ - 40%	2	1,666	.74%	.74%	0
40+ - 45%	0				
Over 45%	0				
Totals	405	541,756	100%	103.54%	3.54

Table D-158

IOWA

SIMULATION IV

ANALYSIS OF SHIFTS BY PERCENTAGE OF CHILDREN LIVING IN DISTRICT WHO QUALIFY AS ORSHANSKY CHILDREN

Percentage of Orshansky Students In District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
0 - 5%	44	50,182	2.56	3.87	12.11
5+ - 10%	144	211,066	22.27	25.75	15.63
10+ - 15%	97	121,710	21.85	23.29	6.59
15+ - 20%	60	54,838	13.99	14.12	.92
20+ - 25%	28	40,427	12.88	12.88	0
25+ - 30%	15	52,319	20.68	20.68	0
30+ - 35%	9	6,929	3.25	3.25	0
35+ - 40%	5	2,984	1.61	1.61	0
40+ - 45%	0				
Over 45%	3	1,301	.91	.91	0
Totals	405	541,756	100.00	106.35	+6.35

Table D-159

MASSACHUSETTS

SIMULATION I

ANALYSIS BY PERCENTAGE OF CHILDREN WHO CURRENTLY QUALIFY AS TITLE I FORMULA CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	121	320,245	6.44%	13.64%	111.66%
5+ - 10%	111	342,516	14.51%	20.15%	38.83%
10+ - 15%	49	176,048	12.46%	13.91%	11.64%
15+ - 20%	25	89,521	9.36%	9.52%	1.67%
20+ - 25%	2	31,058	3.72%	3.75%	.85%
25+ - 30%	7	111,003	18.90%	18.90%	0
30+ - 35%	4	32,074	6.06%	6.06%	0
35+ - 40%	0				
40+ - 45%	0				
Over 45%	1	96,808	28.55%	28.55%	0
Totals	320	1,199,273	100%	114.47%	14.47

Table D-160

MASSACHUSETTS

SIMULATION II

ANALYSIS OF SHIFTS BY PERCENTAGE OF CHILDREN LIVING IN DISTRICT WHO QUALIFY AS ORSHANSKY CHILDREN

Percentage of Orshansky Students In District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
0 - 5%	142	403,250	13.88	33.89	144.16
5+ - 10%	119	506,531	38.18	59.91	56.91
10+ - 15%	40	132,752	16.90	19.11	13.08
15+ - 20%	12	109,423	20.26	20.66	1.97
20+ - 25%	6	47,087	10.70	10.70	0
25+ - 30%	0				
30+ - 35%	1	230	.08	.08	0
35+ - 40%	0				
40+ - 45%	0				
Over 45%	0				
Totals	320	1,199,273	100.00	144.35	44.35

Table D-161

MASSACHUSETTS

SIMULATION III

ANALYSIS BY PERCENTAGE OF CHILDREN WHO CURRENTLY QUALIFY AS TITLE I FORMULA CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	121	320,245	6.44%	7.57%	17.38%
5+ - 10%	111	342,516	14.51%	15.48%	6.68%
10+ - 15%	49	176,048	12.46%	13.16%	5.63%
15+ - 20%	25	89,521	9.36%	9.52%	1.67%
20+ - 25%	2	31,058	3.72%	3.75%	.85%
25+ - 30%	7	111,003	18.90%	18.90%	0
30+ - 35%	4	32,074	6.06%	6.06%	0
35+ - 40%	0				
40+ - 45%	0				
Over 45%	1	96,808	28.55%	28.55%	0
Totals	320	1,199,273	100%	102.98%	2.98

Table D-162

MASSACHUSETTS

SIMULATION IV

ANALYSIS OF SHIFTS BY PERCENTAGE OF CHILDREN LIVING IN DISTRICT WHO QUALIFY AS ORSHANSKY CHILDREN

Percentage of Orshansky Students In District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent, New Children Are of Old Children	Change in Funding
0 - 5%	142	403,250	13.88	16.49	18.80
5+ - 10%	119	506,531	38.18	40.80	6.86
10+ - 15%	40	132,752	16.90	18.31	8.34
15+ - 20%	12	109,423	20.26	20.66	1.97
20+ - 25%	6	47,087	10.70	10.70	0
25+ - 30%	0				
30+ - 35%	1	230	.08	.08	0
35+ - 40%	0				
40+ - 45%	0				
Over 45%	0				
Totals	320	1,199,273	100.00	107.03	

Table D-163

NEW MEXICO

SIMULATION I

ANALYSIS BY PERCENTAGE OF CHILDREN WHO CURRENTLY QUALIFY AS TITLE I FORMULA CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	12	7,787	.19%	1.12%	502.87%
5+ - 10%	13	32,452	6.87%	9.65%	40.32%
10+ - 15%	20	146,964	47.13%	52.86%	12.15%
15+ - 20%	14	41,345	19.12%	22.51%	17.72%
20+ - 25%	7	10,831	6.40%	7.18%	12.12%
25+ - 30%	6	4,710	3.39%	3.79%	11.80%
30+ - 35%	4	16,392	13.61%	18.47%	35.74%
35+ - 40%	1	866	.84%	.84%	0
40+ - 45%	1	170	.19%	.19%	0
Over 45%	3	1,739	2.26%	2.26%	0
Totals	81	263,256	100%	118.86%	18.86

Table D-184

NEW MEXICO

SIMULATION II

ANALYSIS OF SHIFTS BY PERCENTAGE OF CHILDREN LIVING IN DISTRICT WHO QUALIFY AS ORSHANSKY CHILDREN

Percentage of Orshansky Students In District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children are of Old Children	Change in Funding
0 - 5%	6	5,824	.13	.28	115.38
5+ - 10%	4	1,245	.13	.23	76.92
10+ - 15%	3	1,279	.24	.25	4.17
15+ - 20%	6	30,323	7.50	7.51	.13
20+ - 25%	10	96,736	27.44	27.85	1.49
25+ - 30%	15	75,074	28.57	28.71	.49
30+ - 35%	2	3,097	1.37	1.45	5.84
35+ - 40%	8	16,313	8.61	8.61	0
40+ - 45%	7	8,067	4.77	4.84	1.47
Over 45%	20	25,298	21.24	21.37	.61
Totals	81	263,256	100.00	101.10	1.10%

Table D-165

NEW MEXICO

SIMULATION III

ANALYSIS BY PERCENTAGE OF CHILDREN WHO CURRENTLY QUALIFY AS TITLE I FORMULA CHILDREN

Percentage of Present Title I Students In District	Number of Districts	Total Enrollment	Percent of State's Present Title I Children	Percent New Children are of Present Title I Children in State	Change in Funding
0 - 5%	12	7,787	.19%	.95%	408.72%
5+ - 10%	13	32,452	6.87%	7.10%	3.27%
10+ - 15%	20	146,964	47.13%	52.00%	10.33%
15+ - 20%	14	41,345	19.12%	22.51%	17.72%
20+ - 25%	7	10,831	6.40%	7.18%	12.12%
25+ - 30%	6	4,710	3.39%	3.79%	11.80%
30+ - 35%	4	16,392	13.61%	18.47%	35.74%
35+ - 40%	1	866	.84%	.84%	0
40+ - 45%	1	170	.19%	.19%	0
Over 45%	3	1,739	2.26%	2.26%	0
Totals	81	263,256	100%	115.29%	15.29

Table D-166

NEW MEXICO

SIMULATION IV

ANALYSIS OF SHIFTS BY PERCENTAGE OF CHILDREN LIVING IN DISTRICT WHO QUALIFY AS ORSHANSKY CHILDREN

Percentage of Orshansky Students In District	Number of Districts	Total Enrollment	Percent of Present Title I Children	Percent New Children Are of Old Children	Change in Funding
0 - 5%	6	5,824	.13	.24	84.62
5+ - 10%	4	1,245	.13	.21	61.54
10+ - 15%	3	1,279	.24	.24	0
15+ - 20%	6	30,323	7.50	7.51	.13
20+ - 25%	10	96,736	27.44	27.85	1.49
25+ - 30%	15	75,074	28.57	28.71	.49
30+ - 35%	2	3,097	1.37	1.45	5.84
35+ - 40%	8	16,313	8.61	8.61	0
40+ - 45%	7	8,067	4.77	4.84	1.47
Over 45%	20	25,298	21.24	21.37	.01
Totals	81	263,256	100.00	101.03	1.03